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THE GIFT OF

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THE

Florist and Pomologist:

A PICTORIAL MONTHLY MAGAZINE

OF

FLOWERS, FRUITS, AND GENERAL HORTICULTURE.

CONDUCTED BY

ROBERT HOGG, LL.D., F.L.S.; THOMAS MOORE, F.L.S.;
AND WILLIAM PAUL, F.R.H.S.

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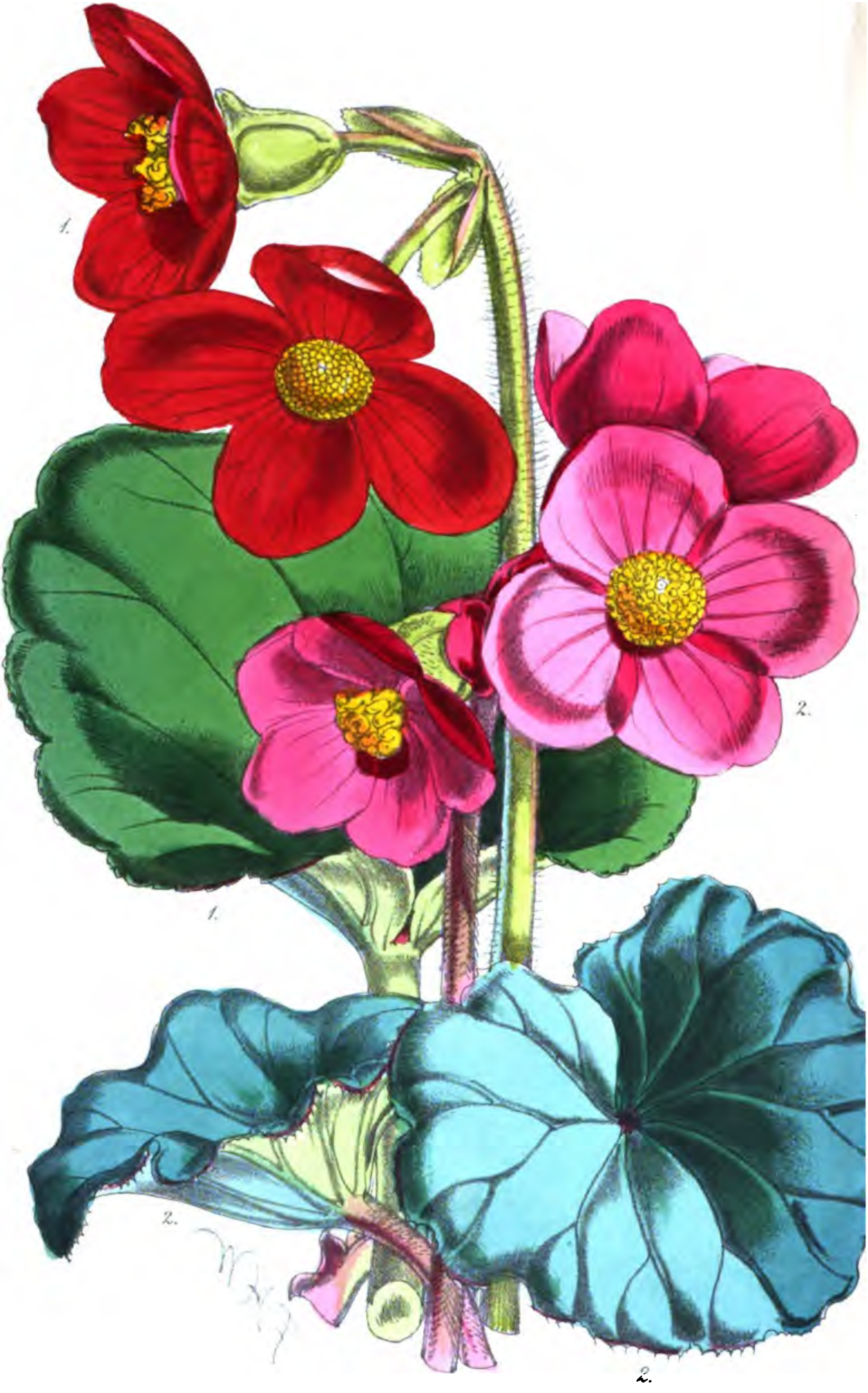


1. Begonia Veitchii. | 2. B. rosæflora.

THE
FLORIST AND POMOLOGIST.

NEW HARDY BEGONIAS.

WITH AN ILLUSTRATION.

THE plate with which we introduce to our readers a New Series of the Florist and Pomologist, represents a highly popular family of plants, under a new phase. We have hosts of Begonias familiar as stove plants; we are not unacquainted with them as inhabitants of the greenhouse or the window garden; we have acquired some experience with them as ornaments of the summer flower garden; but until the fortunate acquisition by the Messrs. Veitch & Sons of the subjects of our illustration, no one was sanguine enough to hope to meet with any form of this popular genus, taking its rank amongst the hardy subjects—the everybody's plants—of our gardens. And yet we are assured from practical experience, that this character will be sustained by one at least of the beautiful novelties we now figure, *B. Veitchii* having withstood a winter temperature of 25° F. with absolute impunity; while as *B. rosæflora* comes from an equally elevated habitat, it may fairly be assumed that it will keep rank with its brilliant compeer in respect to endurance of cold.

Both these species are, it will be observed, dwarf herbaceous plants; and even if it should prove that, whilst enduring the cold, they require some slight protection against the vicissitudes of our variable climate, we must welcome them as amongst the most valuable and important of recent acquisitions, since they are not only remarkable for the size and beauty of their blossoms, but also for the facility with which they may be cultivated. Both are natives of the Andes of Peru, and grow at an elevation of from 12,000 to 12,500 feet

Though presenting a certain amount of similarity in their aspect, the two sorts are abundantly different both as to foliage and flowers. *B. Veitchii* has thick concave leaves of an obliquely ovate or roundish cordate outline, two-flowered scapes 8 to 10 inches high, and large flowers of a bright cinnabar red colour, one being female and rather smaller than the male. *B. rosæflora* has also thick concave leaves; but they are of a more rounded outline, with much deeper basal lobes, and the veins are so deeply impressed as to render the surface bullate; while the scapes, which are red, like the petioles, are three-flowered; and the large flowers are of a clear rose colour, one of the three being female. They are thus abundantly distinct as decorative plants, and out of bloom have more the aspect of some broad-leaved Saxifrage, such as *S. ciliata*, than that with which we have hitherto been familiar amongst Begonias. There are other technical differences, such as the form of the bracts, which are oblong in *B. Veitchii*, and broader and shorter in *B. rosæflora;* while in the first the wing of the ovary is blunt-pointed, the ovary being smooth, and in the latter it is acutely pointed, the ovary being hairy.

No doubt these very showy novelties will open out a new field, of which the hybridiser will not be slow to avail himself. T. M.

NOTES ON FINE-FOLIAGED SUB-TROPICAL PLANTS.—I.

THE ORDER MUSACEÆ.

THE small group of Musads, containing only four genera, *Heliconia* *Musa*, *Strelitzia*, and *Ravenala*, does not, on a cursory view, appear to contain many plants possessing superlative or even ordinary merit, as decorative objects, for the open air in this country; but yet on examination we find that it contains a few gems of the first water for that purpose, and also as regards their utility to mankind.

The order comprises some of the most valuable plants, both for the abundance of nutritive food afforded by their fruit, called in the tropics Plantains and Bananas, and for the many domestic purposes to which their gigantic leaves are applied; the Banana being used for thatching Indian cottages, for a natural cloth from which the traveller may eat his food, and as a material for basket-making. Finally, one species (*Musa textilis*), yields a most valuable flax, from which some of the finest muslins are prepared.

Voight, in his *Hortus Suburbanus Calcuttensis*, published in 1845, says of the *Musa paradisaica*, that it "fruits throughout the year." The fruit of the Banana affords a luxury that is familiar to the traveller in every quarter where it ripens its fruit, against which, however, he has at first a certain degree of prejudice, whether as a dessert or cooked article; but this prejudice is soon overcome, and the Banana is thereafter regarded as an indispensable article at his table. As in many other cases, Bananas are the most delicious when the ripe fruits are gathered fresh from the plants; these have a totally different flavour from the exported fruits, which are cut green, and have to ripen on the passage. The varieties differ also both in size, appearance, and quality, and the flavour differs according to the season at which they ripen. They may be designated, if grown under favourable circumstances, as plants of continuous or perpetual growth, throwing up suckers at all seasons, and ripening their fruit in about ten months from the rising of the sucker, Thus a continuous crop of fruit is produced, justifying the foregoing quotation from Voight.

Little care is bestowed on their cultivation by the natives of the plains of India, beyond selecting a sheltered open space for the plantation. They almost invariably, however, plant a group as near to their cottages as convenient, and as the soil of the plains is more or less alluvial, they are there found in great perfection and luxuriance. The Dwarf Banana (*Musa chinensis*, Sweet.; *Cavendishii*, Paxt.), was sent to the Botanic Garden at Calcutta by the late Duke of Devonshire, with a collection of economic plants in my charge, in 1837, since which time it has been extensively cultivated in the East Indies, on account of the excellence of its fruit, and its dwarf habit, which render it a most valuable sort for general cultivation, as it sustains less injury than the tall varieties of *Musa paradisaica*, from the periodical gales which occur at the change of the monsoon.

It appears that twelve species of *Musa*, natives of the East Indies, were known to Voight in 1845, and since that time several species, not enumerated in his work, have been introduced to this country, amongst which *M. Ensete*, a native of Abyssinia, is most conspicuous. This may indeed be regarded as the most magnificent Musad known, possessing the habit and character of Roxburgh's *M. superba*, a native of Dindygul. It only requires the temperature of the conservatory, and is capable of bearing exposure to the open air in summer, where it grows most luxuriantly, forming, in my opinion, the most striking and magnificent object imaginable as a foliage plant. In my enumeration of the species of *Musa* adapted for open-air decoration it will occupy the first place; but I must first offer a few remarks on the genera *Strelitzia* and *Ravenala*.

Battersea Park. J. GIBSON.

NEW ROSES.

NEW Roses may, perhaps, be considered an appropriate subject for discussion at this particular season of the year; but I would not raise the expectations of my readers too high by the assumption of this title, and therefore say at once that I do not intend to venture on prophecies, but to deal with facts. After many years' experience I have concluded not to deliver a final judgment on a new Rose until I have seen it grow and blossom in my own hands. This, as will be seen, places beyond my present pale the Roses first sold in the autumn of 1867, because they have bloomed in France only. Although I have been through all the French Rose grounds recently, and have seen most of their novelties, I would as soon venture to name the horse that should win the Derby of

1868, as to say which of the numerous high-sounding names and temptingly-described novelties would prove to be the real gems of the year.

It is amusing and instructive to meditate in one's yearly round on the different treatment these novelties meet with at the hands of the raisers. Guided by the light of experience, they know perfectly well whether high, low, or moderate living is suitable to their *protégées*, and most likely to develope the desired points of beauty to the last degree of capability. Here is a Rose with few or thin petals, petted and stuffed like a prize pig; here another, naturally too gross and bulky, left to shift for itself, or treated according to Banting. One is allowed to develope every flower-bud that forms; another exhibits a blossom only here and there. And so closely and skilfully are the plants tended, that it is not always easy to decide whether more flower-buds have ever been formed, or whether they have been formed and removed in a very early stage of existence, for reasons best known to the grower. But let me have a Rose in my own hands, know the routine of cultivation, watch the various stages of progress from the unfolding of the leaf to the development of the flowers, and I have real data on which to reason, and found an opinion.

Strange as it may seem, it is yet true, that notwithstanding the fierce diatrabes that have been launched, and in some instances justly launched, against new Roses, their sale continues to increase! My own experience is that more new Roses were sold last year than in any previous year; *but*—and this is an important but—the sale has been confined to fewer sorts—sorts, the raiser's description of which can be endorsed by a second and independent authority. Rose amateurs do not seek novelty less than formerly, but are quitting the haphazard system of taking the prettiest descriptions, having, no doubt, found by experience that Roses on paper, and Roses on the tree, are not always identical in fact, notwithstanding the identity of name.

Well, then, to the New Roses of the autumn of 1866 and the spring of 1867 I shall confine my remarks, reserving for consideration at a later date the novelties of November, 1867—albeit, the sweet music of their names and their descriptions is, as the most recent of incantations, still ringing in my ears. Having grown nearly all the New Roses sent from France in the autumn of 1866, I think that I may venture to select and describe twenty-four sorts as likely to prove worthy of being added to the most limited collection.

Antoine Ducher, H. P.: flowers bright red, very large, full, well-formed, and globular; growth vigorous. A seedling from Madame Domage.

Aspasie, H. P.: flowers clear rosy red, with deeper-coloured centre, of large size and full; growth vigorous.

Black Prince, H. P.: flowers dark crimson, shaded with black, large, full, and of perfect form; habit hardy and vigorous; the foliage broad and handsome.

Charles Verdier, H. P.: flowers fine rosy flesh colour, bordered with white, of fine form, very large and full; growth vigorous. A good hardy light-coloured Rose. A seedling from Victor Verdier.

Cœur de Lion, H. P.: flowers bright even rose colour, large, full, and of perfect form; growth vigorous.

Comtesse de Jaucourt, H. P.: flowers fine, rosy flesh colour, large, full, and of good form, pleasing and distinct; growth vigorous.

François Treyve, H. P.: flowers dark shining scarlet, resembling the Cabbage Rose in form, large and full; growth vigorous.

Gloire de Montplaisir, H. P.: flowers brilliant red, large, full, and of perfect form; growth vigorous.

Horace Vernet, H. P.: flowers beautiful velvety red, shaded with dark crimson, petals broad and round, large, and almost full. A showy Rose, hardy and free; growth vigorous.

Jules Calot, H. P.: flowers beautiful bright reddish carmine, large, and of perfect form growth vigorous.

Lady Suffield, H. P.: flowers pure purplish crimson, the colour uniform throughout, not shaded, large, full, and of perfect form; foliage handsome; growth vigorous.

Madame Bellenden Ker, H. P.: flowers pure white, of medium size, full; growth moderate. A good white Rose, flowering in clusters.

Madame George Paul, H. P.: flowers dark bright rose, shaded and edged with white, large petals, also large and round, full, and of good form.

Madame Margottin, Tea-scented: flowers beautiful dark citron yellow, the circumference of the petals cream colour, large, globular, and full; habit good; growth vigorous.

Madame Pulliat, H. P.: flowers dark rose, large, full, and of fine globular form; growth vigorous.

Madelaine Nonin, H. P.: flowers rose colour, slightly tinged with salmon, large, full, and globular; growth vigorous. A fine large Rose, something in the way of Baron Gonella; very distinct.

Mdlle. Annie Wood, H. P.: flowers beautiful clear red, large, and full; growth vigorous.

Monsieur Furtadot, Tea-scented: flowers clear sulphur yellow, produced in clusters, something in the way of Céline Forestier, of good form, and full; growth vigorous.

Monsieur Noman, H. P.: flowers delicate rose, bordered with white, large, and full; growth vigorous; habit of Jules Margottin, but of a different colour.

Napoléon III., H. P.: flowers scarlet and violet shaded, large, but not quite full, colours beautiful; growth rather slender.

Paul Verdier, H. P.: flowers bright rose, large, full, and of perfect form; growth vigorous.

Souvenir de Monsieur Boll, H. P.: flowers cerise red, very large and full, of perfect form; growth vigorous.

Thosin, H. P.: flowers pure bright rose, large, full, and of fine form; growth vigorous. A good hardy Rose of free growth, and very sweet.

Velours Pourpre, H. P.: flowers bright velvety crimson, illumined with dark brown scarlet and violet, large and full; growth moderate.

Paul's Nurseries, Waltham Cross, N. WILLIAM PAUL.

A FEW HINTS ON FORCING GRAPE VINES.

JUST at the time the FLORIST AND POMOLOGIST drops into the hands of its readers, all those who want ripe Grapes by the end of May or the middle of June, will be about starting to force the Vines they have in cultivation for that purpose. I will assume that the Vines have been dressed with a mixture of sulphur and soft soap, compounded with tobacco water and clay; but if not done the following is the proportion I recommend:—3 oz. of soap, 4 oz. of sulphur, 1 oz. of soft soap, and a pint of weak tobacco water, to one gallon of water, clay being mixed with it until it is of the thickness of paint. It is to be put on with a home-made paint brush formed of short pieces of bass matting. Dress the Vines over very carefully, taking care to fill every crevice with the mixture. Do not bark the Vines, but rather take a little extra trouble to stop up every crevice of the bark. This will help, in a great degree, to destroy any insects which may be secreted under the bark.

If the early vinery has pipes in it, for heating by the means of hot water, and sulphur and lime has been left on the pipes from last season, let these be removed by washing and scraping, or they will most likely rust the young tender berries soon after the Vines are out of bloom. I have known the scorching rays of the sun, together with the influence of the hot pipes and a dry atmosphere, to rust Grapes—so much so, that they have cracked before they have finished their colouring. The giving air to Vines in hard frosty weather is well known by all those who have to force early to be a critical matter, especially in windy weather.

The Vineyard, Garston. J. MEREDITH.

ROOT CULTURE.

WERE the words "Sacred to the Roots" to be inscribed on every fruit-tree border throughout these islands, then fruit-growing would at one bound reach a higher level, whence general success might almost be commanded. Root culture is the weak feature of our practice. In fact it is not too much to say, that as a science it is all but ignored. The ideas of the best cultivators, are upon this head of the most elementary description. With many they reach no further than that roots belong to the earth, and that they must be covered over. Others go a step beyond this, and add that they must be kept near the surface, and be furnished with suitable food and drink. But scarcely any have yet reached the length of boldly contending that they must have a place entirely to themselves, though it is only by such isolation that they can receive the special culture which they need, and which their vital importance to the plant, and their direct influence on the quantity and quality of its produce demand. Many of our so-called improvements in root culture, simply add to the cruelty with which they are treated. Lifting them, for instance, nearer the surface, only brings them nearer to one destructive agent, and closer to the jaws of death.

No; if fruit borders must be cropped with other things, and digged deep for these objects, then, in the name of common sense, let us encourage them to pierce down beyond the reach of our ruthless spades, so as to give them at least a chance of life. What is the use of enriching our borders with food for severed roots? It only mocks their helplessness, or tempts them to move forward to swift destruction at the next digging! Are fruit trees, then, so worthless, their health of so little consequence, their produce of so small value, that we cannot afford a bit of ground for their special use? Can it be that the humblest herb or the commonest vegetable, is of greater worth than these? Each of these demands and secures its special plot, making this, in fact, the condition of its presence. And herein, I fear, lies the reason of our neglect of the roots. They are out of sight, and, unless at planting, pruning, or digging times, are for this reason mostly out of mind, and their condition, their accidents, and their barbarous mutilations are alike unseen. They are proverbially long-suffering; they retain a firm hold of life; their perseverance, and even their success under crushing treatment, is well nigh miraculous. Cast down, torn up, cut asunder, they are not destroyed. In the silence, in the darkness, exposed to freezing cold, benumbed with chilling water, they work bravely on to recover their misfortune, resolved to live, and not to die. But the warfare with our cruel culture is unequal. Once a-year, sometimes much oftener, we attack them with our spades. Hardly have they had time to gather up their energies and heal their wounds, than they are made to bleed afresh. And so the unequal contest continues, until at last the energies of the roots become paralysed, and their signals of distress are hoisted high on to the top of the tree. After this remedial measures are generally too late. The roots are debilitated by active disease, and the virus of death itself has run through the entire plant.

Scarcely ever is a diseased plant removed but the state of the roots affords a clue to the cause of death. They have either been thrust into an ungenial medium, or badly treated in a good soil, the latter being by far the most common cause of disease. It is also readily preventible. The chief remedy consists in letting them alone; and to this end the roots of every tree must have that which the humblest blade of grass demands as the condition of its growth, and the charter of its birthright—a piece of ground wholly to itself.

Hardwicke House, Bury St. Edmunds. D. T. Fish.

THE CULTURE OF PEAR TREES IN POTS.—I.

IT is now several years since I first recommended this mode of culture for Pears—at first with some little hesitation, because I had found in some cases that the fruit of Pears ripened under glass was not equal to that gathered from trees in the open air; and there was a tendency, not only in myself, but with other cultivators, to allow the trees to stand in the orchard house till their fruit was ripe. It was indeed an irksome task to remove trees with such fine fruit on them, from calm and pleasant quarters, although in the warmer parts of England quite necessary to give piquancy of flavour.

The best kind of compost for the pot culture of Pear trees is two-thirds loam (that called sandy loam is to be preferred), and one-third of manure thoroughly decomposed. This should be mixed and prepared towards the end of summer, and about the middle of September be removed to a shed; so that towards the end of October, when the trees should be potted, the compost may be in a proper state as regards dryness. If a considerable number of trees are proposed to be cultivated, the No. 8, or 11-inch pot, is to be preferred, as that is a portable size, which must be taken into consideration, as the trees are destined to be removed twice a-year. In potting, the compost should be well shaken into the mass of fibrous roots; and when the pot is filled to about three-fourths of its depth, it should be rammed firmly down with a stout stick, and the pot then filled up, another ramming being given so as to leave the surface concave. Water should then be poured gently on till it soaks through and through the mould, and the operation may be considered as finished.

The kind of Pear trees to be selected for pot culture are pyramids, grafted or budded on the Quince stock. These, if they have been well managed in the nursery, will be full of blossom buds, and their roots masses of fibres, so that, to use an old-fashioned gardening expression, they "will not miss their moving"—which I presume is to be interpreted, "their removal will not retard their growth". They will in truth, if potted in November or early in December, bear a nice crop the following season. As soon as the trees are potted, they should be placed in the orchard house, stowed as thickly as possible, and the pots covered with leaves or litter to some 5 or 6 inches in depth. This will keep the mould in a proper state of moisture, and prevent injury from frost. If trees three or four years old are potted they may be expected to bear nice, although not full, crops the second year after potting, but they will not bear full crops till some six or seven years old.

Their routine culture should be as follows: They may remain undisturbed in the orchard house with their protection of leaves or litter till the end of March, when it should be removed, and the trees have a good supply of water. This treatment applies not only to freshly potted trees, but to those already established. Although the trees are so close that their pots touch each other, they may be suffered to bloom and set their fruit without being moved. As the Pear does not put forth its leaves to any extent till long after the fruit is set, no injurious crowding takes place. About the end of the first week in June, when in the greater portion of England spring frosts are over, all the trees should be removed from the orchard house to their summer quarters, which should be some sunny place near the orchard house. If the soil be moist and tenacious, the pots should be plunged to only two-thirds of their depth, and then covered with some light half-decayed manure to about 2 or 3 inches deep. If the soil of the summer quarters be dry and light the pots may be plunged to their rims, and the surface of each pot covered with decomposed manure saturated with liquid manure to 2 inches in depth; and then, if the weather be hot and dry, the whole of the border in which the pots are plunged should be covered, pots and all, with short half-decayed manure, or anything like it, so that but little water may be required. During the summer the fruit should be thinned, for, owing to the kind nature of the climate in which the trees blossomed, the fruit will set in large clusters, and if not thinned will give Pears inferior or worthless. A tree the second year of its potted life may be suffered to bear one dozen of Pears; in the third year from a dozen and a quarter to a dozen and a half. As a rule, a tree in an 11-inch pot should not be allowed to bear more than two dozen of Pears of ordinary size, and, if large kinds, seldom or never more than one and a half dozen.

The pot culture of Pear trees is so simple and so safe in its results, that it must and will progress; so that in a few years people who annually have crops of fine Pears with the assistance of glass, will look with wonder on the dark ages of Pear culture, when the crop entirely depended on the mildness or the converse of our springs—if mild, Pears; if frosty, no Pears.

T. R.

PEAS NEW AND OLD.

THE earlier, and perhaps the more important of the various sorts of Peas grown this year at Chiswick, for experimental purposes, were briefly described at p. 190 (1867) of the former series. The remainder, amongst which will be found some very useful sorts, and many old favourites, will now be noticed; their quality, generally speaking, is, however, scarcely equal to that of some of the varieties already mentioned.

British Queen is a white wrinkled Marrow, an old, well-known, and general favourite. When sown at the same time as Sangster's No. 1 it comes into use three weeks after that variety. It is very prolific, and continues bearing for a long time in succession, so that a great many gatherings can be had from the same row. It grows from 6 to 8 feet in height; the pods are very large, full, of a pale green colour, containing from seven to nine large peas in each, of very fine quality. *Hooper's Incomparable*, *Wonder*, and *Cattell's Wonder* are identical with it. *Tall Mammoth* very much resembles it, but is a few days later.

Knight's Tall White Wrinkled Marrow is a few days later than British Queen. It grows from 4½ to 5 feet high, and is very prolific; the pods are pale green, rather flat, with an exceedingly thin inner lining; they contain from seven to eight peas each, which are remarkably sweet and tender. *Spider Pea* (Stuart & Mein), is a white wrinkled Marrow, of good flavour.

Lynn's Prolific Wrinkled is a white wrinkled Marrow, about 3 feet high; when sown at the same time it comes into use one month after Sangster's No. 1. It was the latest of all the varieties grown. The pods are small, but well filled. It is very prolific, with a fine hardy constitution, standing against the summer droughts well. The dried seed is of a brownish white colour, small, much compressed, almost square, with a small black spot on each. Owing to this characteristic it is sometimes called *Black-eyed Susan*.

Auvergne, a second early white Marrow, is an old, well-known, and general favourite where quantity not quality is desired. Sown at the same time, it comes into use about a fortnight after Sangster's No. 1. The pods are long and rather narrow, much curved at the point, containing from seven to ten peas in each. It has a very vigorous hardy constitution, grows from 4 to 6 feet high, and is very prolific. *Dickson's Favourite* is a selection from the Auvergne; the pods are larger, broader, and not nearly so much curved; it is the better variety of the two, and is very often substituted for it. *Torwoodlee* is a synonym of Favourite.

Princess Royal is a second early white Marrow, from 2½ to 3 feet high, eighteen days later than Sangster's No 1, and a first-class Pea. The pods are large and broad, with from seven to eight large peas in each, of excellent quality. It is of a fine vigorous constitution, and an abundant bearer. The ripe seed is large, round, smooth, slightly indented, of a very clear whitish appearance. *Cattell's Kent Rival* is identical with it.

Paradise Early Marrow is ten days later than Sangster's No. 1, and about 4½ feet high. The pods are large, full, and broad, of a whitish appearance, containing from seven to eight large peas, of very good quality. It is a prolific and good Pea. *Mein's Paradise, Giant Early Marrow*, and *Excelsior Marrow* are identical with it.

Somersetshire Early Prolific is very similar to the old White Prussian. *Peabody* is of the same class, but of no particular merit. *Harrison's Perfection* is quite superseded.

Waterloo Marrow is about 6 feet high; sown at the same time, it comes in three weeks after Sangster's No. 1. The pods are large, full, slightly curved, containing from seven to eight large peas in each, of very good quality. *Victoria Marrow* is identical with it.

Garbutt's Amazon is a very strong-growing blue Marrow, about 6 feet high, three weeks later than Sangster's No. 1, with large full pods and large peas, but of poor flavour.

Prizetaker is a well-known second early green Marrow, from 4½ to 5 feet high, about a fortnight later than Sangster's No. 1. The pods are large, rounded, curved, remarkably well filled, and of a deep green colour. It is a very prolific free-bearing variety, and very handsome in appearance, always commanding a high price in market. It is, however, not very sweet in flavour; indeed, the varieties of this class of Peas are altogether inferior in flavour to the wrinkled varieties. The ripe seed is of a mixed white and olive green. *Laxton's Prolific Long-pod* is very similar to this, but is frequently mixed with a white-seeded variety, the same in general appearance. *Green Prolific* and *Grotto* are identical with it. *Green Marrow* (Wrench), is a somewhat stronger grower, a larger sample, with broader and larger pods. *Blue Excelsior* is a second early green Marrow; *Knight's Blue Emperor* is identical with it. *Early Surprise* is somewhat larger, and an improvement.

Scimetar, a well-known variety, and much esteemed for general purposes is much used for field culture, as it is very hardy, and does well without staking. It grows about 3 feet high, and comes in three weeks after Sangster's No. 1. The pods are large, curved or sword-shaped, rather flat, well-filled, with from seven to nine peas in each, of a nice green colour, and fair quality. *Carter's Improved Scimetar* is no improvement. *Flack's Imperial*, of the same class, is earlier than Scimetar. *Banksian Marrow* is an improvement on it. *Carter's Surprise* is of the same style. *Harrison's Glory* is quite superseded.

Blue Prussian is an old well-known variety, a very prolific bearer, but of poor flavour. *Woodford Green Marrow* is of the Prussian class, and also poor in flavour. *Batt's Wonder* is from four to five days later, rather larger, and an improvement on it.

A. B.

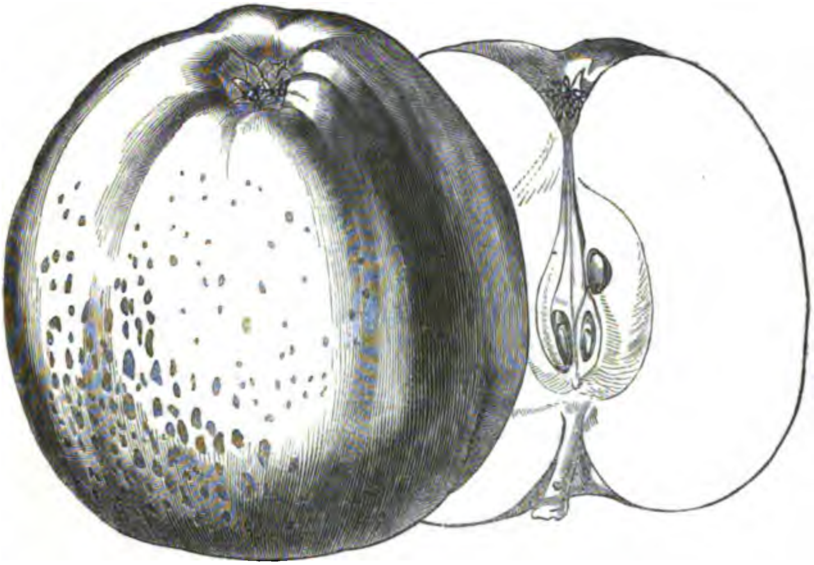
ORD'S APPLE.

THIS though an old Apple, is, nevertheless, comparatively unknown, and yet, as a dessert fruit in the months of February, March, April, and May, it is, in my opinion, unrivalled, being as fresh, crisp, and juicy then, as most other Apples are in September and October. Before Christmas it is sharp and sour; but in the late spring months its freshness and piquancy of flavour is something remarkable—so much so, that it seems as if it had been just gathered from the tree, and yet combined with a peculiar softness of substance, like that of the White Calville. It is also an excellent cooking variety in the spring months.

Its appearance is somewhat against it, for it might well be termed ugly—nearly as unprepossessing as that richest of all Apples, the Cornish Gilliflower. It is, however, much relished and sought after, by all who have tasted it.

It is of medium size, oblong, inclining to ovate, flattened at both ends, obtusely angular on the sides; eye small, closed, depressed, set in a narrow irregularly-formed cavity; stalk about half an inch in length, slender, rather deeply inserted; skin thick, and always of a greenish colour when on the tree, tinged with reddish brown, and thickly spotted with numerous copper-coloured or ferrugineous specks on the side next the sun. After the fruit has been some time gathered the green colour changes to a yellowish shade. The flesh when quite ripe is of a yellowish tint, firm but crisp, juicy and tender, sweet and very refreshing, with a slight perfume.

The tree itself is hardy, free-growing, and an abundant bearer. The fruit, however, would be benefited by being grown in a warm situation, it being so late in ripening. It is, perhaps, questionable if it would succeed in our northern counties; but for the southern counties it is highly to be recommended.



It was raised at Purser's Cross, Fulham, by the late John Ord, Esq., about ninety years ago, from seed of an imported Newtown Pippin, and was sent out from the Hammersmith Nursery. The variety is figured in the "Transactions" of the Horticultural Society (ii., 285.)

Chiswick. A. F. Barron.

HERBACEOUS CALCEOLARIAS.

VERY few plants are more effective for decorative purposes than the Herbaceous Calceolaria, and none more easily grown if properly treated. Few subjects have, moreover, made greater progress of late years in respect to quality than these. A few years since we had tall, weakly-growing plants, that required a number of sticks, and much tying-out, to fit them for exhibition. Now, thanks to skilful hybridising, we have them dwarf, and of robust habit, with a profusion of large well-shaped flowers of brilliant colours, which, when grouped together, have a charming effect, whether used for the decoration of the conservatory or the flower garden.

The Calceolaria ought to be more appreciated than it is, and more collections should be brought forward at our exhibitions. Those who have had the pleasure of visiting the International and other London flower shows, must have been struck with the gorgeous effect produced by the collections staged by Messrs. Dobson & Sons, Mr. Turner, and Mr. James. Such collections as these show to what perfection the Calceolaria may be grown, and ought to stimulate others to try and do likewise. A few hints as regards their proper treatment may be, it is thought, of some use to those who wish to grow them well.

Having procured a packet of seed of a good strain, it is advisable to sow in 32-sized pots, so as to secure a proper drainage; this is easily effected by putting in 2 inches of broken crocks and an inch of rough mould of a fibrous nature; the pots must then be filled to within half an inch of the top with soil composed of equal proportions of loam, leaf mould, and silver sand, which must be rubbed through a fine sieve. The surface must be made very smooth, and watered gently, and after the water has thoroughly drained off, the seed is to be sown very thinly over the surface. Place the pots in a cool frame, with a slight shading over them, until the seedlings are ready to be pricked-off. They ought to be pricked-off into a box or pan filled with the above-named compost, and returned to the cool frame, where they should be kept close and shaded for a few days till they have made fresh roots, when the shading can be taken off, and abundance of air given. After they have made their fourth leaf, they ought to be put into 60-sized pots, and kept in a temperature of from 65° to 70°, with abundance of moisture. As soon as they have filled these pots with roots, they should be shifted to large 48 or 32-sized pots, which is quite large enough for the first year of flowering. The compost to be used now is two parts turfy loam, one part leaf mould, and one part rotten dung and silver sand. Care must be taken not to pot too firmly. To have a nice bushy plant, and a succession of bloom, the centre ought to be pinched-out as soon as the plants have established themselves in their blooming pots.

The plants to grow on for the second year ought to be selected while in flower, and cut back immediately after the flowers have faded. They may then be placed behind a north wall, where they should remain until the second week in September, during which period they must be watered moderately. After this, they should be repotted into a 10-inch pot, in which they are to remain for blooming the next season. The same compost as last mentioned should be used, but the plants should be potted more firmly. Decayed leaves ought to be carefully taken away; and the plants should be fumigated once a-fortnight, or oftener if necessary, to keep them free from the aphis and other insects that are apt to infest them.

Syon House Gardens. GEORGE FAIRBAIRN.

ON VINE PRUNING.

I STRONGLY recommend those who have hitherto pruned their Vines on the Close system, to try the Extension one. Let them prune to a good eye instead of cutting every visible eye away, and I am sure they will soon see the advantage of adopting this method. I think it a practical anomaly that a quick-growing and long-lived plant like the Grape Vine should not be allowed to extend itself, except in the first few years after planting. Long before the Vines get into their teens, they are restricted to about the same quantity of leaves every season, and consequently there is no impetus given to the roots to extend themselves much; but let the top extend yearly, and the roots will do so likewise, and enjoy their fresh food much better than taking the old dose over again. I believe many vineries have been ruined because the roots have not had the power to push onward. A vinery might be made much more productive as well as ornamental, and it would be more in conformity with the habit of the plant, if the Vines were festooned, and trained wherever they could get proper light. As this cannot be easily accomplished in lean-to houses, I train them after the fan fashion, and do not dress them up like Hop poles.

Cole Orton Hall Gardens. M. HENDERSON.

EPIPHYLLUM TRUNCATUM AND ITS VARIETIES.

THE *Epiphyllum truncatum* has always, since its first introduction from Brazil in 1818, received the attention of cultivators, and many a hoary-headed son of Adam has pointed with pride to the big Cactus at the end of the vinery, now all a-blaze with blossom, that had been grafted by himself some twenty years before. At intervals a few others were obtained, as *E. truncatum bicolor*, *Bridgesii*, and *rubro-tinctum*; and in 1839 the lovely *E. Russellianum* made its appearance, also from Brazil. This latter, although recorded as a variety of *E. truncatum*, is certainly a distinct species, for while the varieties of *E. truncatum* usually flower in November and December, the natural blooming period for *E. Russellianum* is the month of May. There are, besides, other differences, the petals being evenly reflexed, the stamens straight, and the seed-vessel angular; while in *E. truncatum* the flower is ringent, the stamens curved, and the seed-vessel smooth. Moreover, the thick leafy branches are less toothed than those of *E. truncatum*, and only one-third of their size.

The late Mr. Hamp, of Mawbey House, Stockwell, tried hard to obtain a hybrid between *Epiphyllum truncatum* and *Cereus speciosissimus*, but could never succeed. He did, however, raise one good variety of truncatum, named magnificum. Mr. Bruce, also, the talented gardener at Collier's Wood, Merton, tried in vain to produce a hybrid between the *E. truncatum* section and *E. speciosum* and others, although he obtained some beautiful hybrids in other sections. It may, therefore, be concluded that *E. truncatum* will not hybridise with the large-flowered species. More recently, some very beautiful hybrids were raised at the Tooting nursery between the *E. Russellianum* and *E. truncatum*, having the symmetrical form of the first, and flowering two months later than the last. The advantage gained by this cross was important, inasmuch as it extended the blooming time quite through the winter, to say nothing of the superiority of form which was secured.

These varieties of E. Russellianum were:—*E. R. rubrum*,* flower double the size of E. Russellianum, and of a bright rosy red; *E. R. cupreum*,* not so large as the last, of a coppery tinge, slightly suffused with purple; *E. R. superbum*,* in which the purple of E Russellianum and the reddish tinge of E. truncatum are beautifully blended. Added to these, a very pretty hybrid of the Russellianum section was raised by Mr. Snow, gardener to the Earl De Grey, called *E. R. Snowii*. No further addition appears to have been made up to the present time to this section.

In the following list I have enumerated and briefly described the best and most showy varieties of the E. truncatum section:—*E. truncatum majus*,* larger than the species, and of a deep rose colour; *albo-lateritia*,* petals silky white, margined with brick red; *amabile*, white and purple; *aurantiacum*, reddish orange; *bicolor*, white and rose edged; *coccineum*,* deep scarlet; *cruentum*,* dark, purplish red; *magnificum*, large, bright rose and white; *purpureum*,* deep purple, nearly self-coloured; *roseum*,* bright rose; *rubro-tinctum*, white and purplish red; *Ruckerianum*, purplish red, tinged with violet; *splendens*,* deep rose; *spectabilis*, white, with purplish margin; *spectabilis carminatum*, white, with reddish margin; *salmoneum*, salmony red; *tricolor*, deep reddish purple and white; *violaceum*, silvery white, with light purple margin; *violaceum grandiflorum*, like the last, but larger; *violaceum superbum*, deep purple and white. Those marked with an asterisk are hybrids, raised by me, at the Tooting nursery.

That the above are among the most useful of winter-blooming plants, whether for the greenhouse, conservatory, or table decoration, and that they have not hitherto received that attention they so justly merit, there can be no question. Plants raised from cuttings, grow and flower tolerably well, but they do infinitely better when grafted on stems from 6 inches up to 18 inches or so in height. This, moreover, allows the flowers to hang in their natural way, and also to show themselves to the best advantage. The compost most suitable for them is good pasture loam and sandy peat, in about equal parts, adding a moderate proportion of leaf mould, and of brick rubble. Pot them when they begin to grow after flowering; drain well, and do not overpot. Place them in a brisk heat till they have made their growth; afterwards in a lower temperature, and in a drier house to harden; and finally expose them to the full sun, to induce them to set their buds. They will begin to bloom in November, and by moving a few at a time into a warmer house, the blooming season may be continued till the spring—the *Russellianum* hybrids being used to come in after those of the truncatum group are past.

It would be an interesting experiment for amateurs, and others having time at their disposal, to endeavour to obtain a hybrid between *E. truncatum* and *Cereus flagelliformis*, as it is more than probable that a distinct and useful progeny would be the result. In order to accomplish this the former would need retarding, as *C. flagelliformis* does not usually flower till late in the spring, or in the early summer months. Seedling plants flower in three years from the time of sowing the seed.

Tooting. W. Buckley.

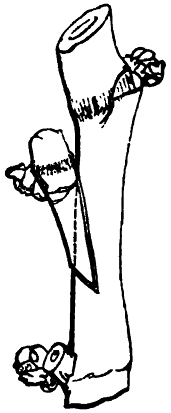
VINE STOCKS, AND THEIR USE IN GRAPE-GROWING.

MUCH has lately been said about Grape-growing, but my opinion is that we know very little as yet as to what can be done for its improvement. I am satisfied from experiment that we have a broad and fertile field before us; but curious, interesting, and satisfactory as they were, my experiments were only as a beginning of this work. I have long thought that for early forcing a great gain might be secured by working the Vines upon stocks having quick root-action, such as Graham's Muscat Muscadine, or the Chasselas Musqué. I have no doubt but that when worked on the kinds I have named, the flavour would be much improved, and the fruit matured much earlier. The character of the fruit is, however, sometimes changed by grafting; for instance, I have grafted the Royal Ascot (which is an oval Grape), on Graham's Muscat Muscadine, and thus grafted, it is not so large in the berry, but quite round, and even improved in flavour.

For a late crop of Grapes, and for hanging, the Vines should be grafted on Lady Downes' Seedling, West's St. Peter's, or some other variety that retains its leaves till late in the season; for Grapes cannot be expected to hang in a fresh condition without some sap flowing in the wood, or without leaves. Some years ago I bought a seedling Grape that promised well as a variety for late use, and as a companion to the Lady Downes', from which it was raised, though it was of a beautiful golden colour. This, as it fruited on the seedling plant, was first-rate in all respects, but subsequently it has been a bad setter, and when stoning would become galled and scalded in the most extraordinary manner. But it is one of the strongest growers I know; and as I had propagated many plants of it, I determined, on finding it useless as a fruit-bearer, to try its value as a stock, for which purpose I planted out several in my vineries. Those in my Muscat house I grafted with the Muscat of Alexandria, and although the golden Lady Downes' is as bad or a worse setter than the Muscat of Alexandria, yet the latter when grafted on it, set like a Black Hamburgh, required to be liberally thinned, and swelled-off extremely well, the fruit being entirely different in appearance from all the varieties of Muscats in the house.

I have for some time been thinking about a method which might easily be employed, and which, I believe, while affording a ready means of grafting sorts which it might be supposed would be improved by this process, would also enable us to do so with the least possible loss of time as regards the growth of the variety intended to be fruited. My plan was to plant whatever varieties might be considered the most suitable for stocks, in the places intended to be occupied by the fruit-bearing Vines, and near to the stocks to plant the sorts intended to bear fruit; then to cut both back so to insure a break from near the ground, and when the two varieties had made growth enough, and the young wood was in proper condition, to inarch them, stopping the growth of the stock as soon as a union was effected, and encouraging the other to make a vigorous growth. After one or two years' growth and experience, the root of the stock, or that of the fruit-bearing plant, might be destroyed if it were considered advisable.

Where many varieties of grafts are wanted in a house, another very interesting set of experiments might be worked in this way: If there is an established Vine or two in a house which can be conveniently used, get a lot of grafts of properly ripened wood of the varieties which it may be desired to fruit, and work the Vine all over with these. This should be done without cutting too deeply into the stock, which would cause it to bleed, and so prevent a union; but a very shallow cut 1½ inch long should be made, with a cross downward cut at the end, and the graft be fitted to it as shown in the sketch. The graft should be bound up with bass matting rather tightly, and then the junction covered with grafting-wax. A large Vine grafted thus, would carry many sorts, and the grafts would bear fruit the same season. When Vines have been badly ripened, it might be advisable to graft them in the same way with eyes from properly ripened wood, of the sorts intended to be fruited.



I am now just starting several graperies and shall try many experiments in the way of grafting different sorts on what I fancy will be suitable stock, so as to try which succeeds best, and whether improvements cannot be made by this means in regard to flavour, size, &c. I advise others interested in this subject to do the same. In a future paper I shall state my experience about hybrid Grapes, and in what line we ought to proceed in trying to get these.

Royal Nursery, Ascot. JOHN STANDISH.

LONICERA AUREO-RETICULATA.

THIS plant is adapted for a variety of decorative purposes. With us here it has proved perfectly hardy, which is a point of great importance. Last season we employed it in the flower garden, and found it to be most effective as an edging plant, always looking well under the vicissitudes of our variable climate. It may be rapidly increased by cuttings of the half-ripened wood, in a gentle heat in spring. As soon as struck, pot off into small-sized pots, two plants in each, and keep them well pinched to induce lateral branches. By these simple means nice compact plants are secured by bedding-out time. I take care to have them thoroughly hardened-off by gradually exposing them to the full blaze of the sun; and plant pretty closely so as to form a compact line at once. Should there be any gaps we peg down the shoots. Frequent pinchings are requisite to keep the line in good order. I never allow the lines to exceed 4 or 5 inches in height. As it has proved so satisfactory for the purposes I have named, I intend employing it to a much greater extent another season.

It also forms a most desirable plant for pillar decoration in a lofty conservatory when thoroughly exposed. In the shade its beautiful laced foliage is but faintly defined. We have plants in the conservatory here 20 feet high, equally proportionate. These are objects of interest all the year round.

Wrotham Park, Barnet. JOHN EDLINGTON·

CULTURE OF THE DWARF BANANA.

HAVING succeeded tolerably well in cultivating this very excellent exotic fruit—the *Musa chinensis* alias *Cavendishii*—I beg to record the practice which has led to that result, feeling assured that if the simplicity of its culture were better known, it would be more generally grown.

I first obtained some suckers, which were in due course shifted from pot to tub, and from one vinery to another, wherever most heat was to be found. In this way I had but very indifferent success, and the plants were always liable to injury in their removal from house to house. I resolved, then, to try them in the fruiting Pine stove, which is kept at a uniformly high temperature throughout the year. The Pine stove is 80 feet long by 18 feet wide, and 12 feet from the floor line to the apex of the roof, the house being divided in the middle by a glass partition. The Pines are grown over hot-air chambers, plunged in tan. For the Bananas I selected the end of one of the houses next to the glass partition, and there made preparation for their reception. Two boxes were made of inch-thick elm board, and calculated to hold a cubic yard of good sandy loam, including the drainage, which occupied 9 inches of the bottom of the tub. These were let down into the hot-air chamber until their surface was level with the general bed of tan.

In these well-drained tubs of rich earth the plants were inserted, and soon gave evidence of the benefit of the heat supplied by the hot-air chamber. Whilst growing quickly they were liberally supplied with manure water—made sometimes from guano, and sometimes from cow dung. Planted in these tubs in September, they grew rapidly during winter, when about February one plant showed symptoms of fruiting, and the other six weeks later. These clusters of fruit ripened, the one in July and the other in September. Ripening gradually as they do, I had almost a continuance of ripe fruit daily for a period of four months. On first presenting them at table, owing to their excessive richness, some liked them, whilst others did not; but soon the taste got acquired, and then the Bananas, as long as they lasted, maintained their position at the dessert table undisputed by any other fruit. These clusters of fruit weighed respectively 80 and 40 lb.; on the larger cluster there were eighty, each individual fruit weighing about half a pound. Towards the end of the spadix there are always some blind fruits, which never mature; these I cut away as soon as discernible.

During the time these plants were in fruit, a gentleman from Travancore, a province of Southern India, visited the gardens, and assured me that I had succeeded remarkably well in their culture. Amongst other hints he gave me respecting their treatment was the following—that whilst the fruiting plant was growing, and up to the moment of showing fruit, all suckers should be cut off; but directly the fruit shows, one of the frequently cut-down suckers should be selected and allowed to grow, and, according to my Indian visitor's account, the oftener the suckers are cut down, the stronger and the darker-foliaged will they afterwards become, as well as the more likely to throw a fine cluster. This, I feel inclined to believe, has its modicum of truth; for, from my own observation, a sucker which had been frequently cut back, grew amazingly fast, immediately it was allowed to go on, and by September last it thickened and shot forth a fine cluster enveloped in its spathe, the fruit of which is now in a fair way of swelling off. This cluster consists of seventy fruits and is formed of what I may call subclusters, of which there are six, containing in each from ten to twelve fruits, each subcluster being formed of a double row of seven and five, or sometimes six and five, becoming fewer as they approach the end of the spadix.

A captain of the Royal Navy, who lives near here, and to whom I sent a fruit or two, assured me that, having eaten of the Banana in almost every clime where it is cultivated he had never tasted any so good or so high in flavour as those which I sent him, grown in an English garden a mile or two from his own home.

Its simplicity of culture, its willingness to fruit, the quantity of its produce, and its richness when matured, are qualities which will ensure the Banana a place amongst our dessert fruits second to none, which is more than can be said, for instance, of the Cocoa-nut tree.

Combe Abbey Gardens. WILLIAM MILLER.

SEASONABLE GARDENING HINTS.—JANUARY.

THE directions which it is intended to give under this head are chiefly designed for the use of amateur gardeners, though, at the same time, it is hoped they may not be unacceptable to the junior members of the profession. I propose to touch lightly on the principal matters that require attention in each month, and my remarks shall be as practical and useful as I can make them.

The weather of January is, in the average of years, more or less severe. The garden operations of the month depend, of course, to a certain extent on the state of the weather. Now, the protection of plants from frost is one of the first matters that require attention. Dry straw, litter, old hay, and dry fern are excellent protecting materials, and these before severe frost sets in, should be put round the pits and frames, and at night over the mats on the top. All tender plants in pits and frames must be well looked after and protected in frosty weather, but they should have all the light possible; the coverings should, therefore, be taken off every day when the glass is not frozen. Some care must be exercised in giving air in cold weather, also after a frost, when the pits and frames have been covered for several days. In mild weather air should be given freely, and all dead leaves should be carefully picked off. No water should be given if the plants are not suffering for the want of it.

In-doors, hardwooded greenhouse plants should have air whenever the state of the weather permits. No more artificial heat should be given than is necessary to keep out the frost, and no more water should be used than is absolutely required. Softwooded plants, particularly Pelargoniums, should be kept in houses by themselves, for though they can, when well rooted, be safely wintered in pits and frames, they will do much better if they have a temperature not much lower at any time than 45°. Variegated Pelargoniums lifted late out of the flower garden must have a little heat, otherwise they will damp and die off.

In the flower garden the beds of bulbs must be protected from frost, if not already done; and they should be frequently looked over, as rats and mice are very destructive to many kinds of bulbs, especially Crocuses, so that in winter, when food is scarce, they make sad havoc among them if not trapped. The Christmas Rose (*Helleborus niger*), is a very useful hardy plant for furnishing a quantity of flowers for in-door decoration. To prevent the flowers from being spoiled, as they expand, by the rain, snow, or frost, hand-lights should be placed over the plants. Half-hardy plants of all kinds must be protected; also trees and shrubs on lawns, if they are in the least tender.

Though I prefer the autumn for planting, still, if the weather is mild, especially towards the latter part of the month, trees and shrubs of all kinds may be safely planted; and if only moved from one part of the ground to another, and the operation be properly performed, they will do almost as well as if planted in the autumn. I have repeatedly removed large evergreen and other trees in January with the most complete success as regarding their growth afterwards. All such work as the making of flower beds or new gardens, the formation of new walks and the gravelling of old ones, should be pushed on whenever the weather is favourable.

Very little in the way of cropping can be done in the kitchen garden during the continuance of frost, but in mild weather a sowing of early Peas and Beans, and also of Early Horn Carrots and early Radishes should be made on a warm border where they can be protected. Jerusalem Artichokes and Horseradish may be planted.

In mild weather fruit trees may be planted. Before, however, fruit trees are planted, the soil, if cold and wet, must be thoroughly drained, otherwise the result will end in failure. If the land be of a stiff, heavy nature, it should be improved by the addition of fresh turf, or chopped straw, leaves, tan, ashes, sand, or anything that will keep it open. In planting in heavy land the trees should be kept well up, so that the soil over the roots should be a little above the level of the surrounding soil. In the case of light sandy soils having a gravelly subsoil, the first thing to be done is to deepen the borders by the addition of good strong loam, and in planting the trees should be kept rather low, so that the soil over the roots should when finished-off, be a little below the level of the surrounding soil. When fruit trees are planted in light, shallow, sandy land, having a gravelly porous subsoil, they suffer much in hot dry summers from red spider, much of the fruit falls off, and that which remains is small and inferior, while the wood is weak and bad; but by deepening the borders and planting the trees a little below the level of the surrounding soil, they stand the dry hot summer better, and ripen fine fruit and make good wood. The advantage of planting rather below the level of the surrounding soil is, that the rain water which falls at the very hottest season of the year, during thunderstorms, may collect round the trees and pass through the soil among the roots, thus giving the trees a good watering at the very time they require it.

Fruit trees of all kinds may now be pruned. Pear and Apple trees have frequently too much wood left in them, especially old trees. The present is a good time to prune and thin them out. Old spurs should also be well thinned-out when they are crowded in the branches, as well as the buds on the spurs. It is not unusual at this time of the year, especially after a season like the past, when the Apple crop was a light one, to see from twenty to forty blossom buds on an old spur, where one, or at most two, would be sufficient. When all these blossom buds expand they rob the tree, and though the crop may be large the fruit will be small and worthless. But the evil does not end there: the following season there is no crop of fruit. When the trees are properly pruned, and the spurs and buds judiciously thinned, there will be in general a fair crop of fine fruit every year, one bushel of which is worth more than four bushels of the fruit from trees that bear excessive crops.

All late Vines should be pruned at once, that they may have a proper rest. Any Grapes that may be on the Vines may be cut off with a piece of wood, and put in bottles and placed in the fruit room. Vines that are breaking should have air at all favourable opportunities, and the temperature should be gradually raised to 60° at night, which will be sufficient until they are in bloom, when it should be 65° at night. The day temperature should be 10° to 15° higher.

Stourton Park. M. Saul.

ON KEEPING GRAPES AFTER RIPENING.

Of late there has been a great deal of talk about keeping Grapes. Some advocate the plan of putting the stalks in bottles of water, as they do in France, while others recommend hanging the clusters in a moderately dry room. Now, it is plain to me, from the remarks which have recently been made in contemporary publications, and also from what I myself saw when in France four years ago, that we should not go there to learn either how to grow Grapes, or to keep them. In the first place, the bunches cannot be cut and handled without doing them some damage, especially in respect to the colour, if they be black. Then they must necessarily want looking over, to remove bad or decaying berries from the bunch, when they must again sustain damage, so that more injury will be done by handling, than they would have suffered if they had been left on the Vine.

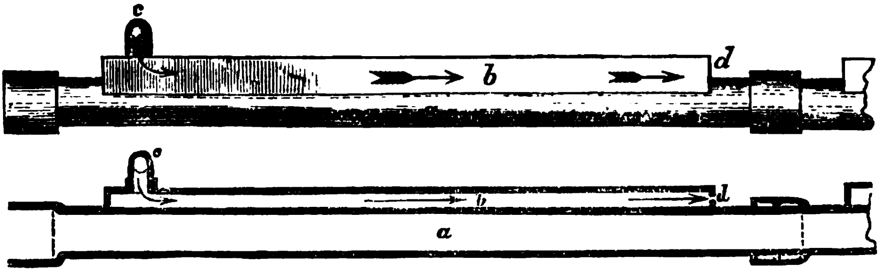
It is well known that in many places in England Grapes are to be found in March or April as fine in appearance, and as well kept, as they were in the previous October. I myself cut some Alicantes and Lady

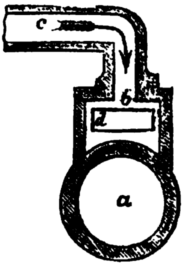
Downes' Seedling Grapes last April as good as they were six months before, and I think that the art of keeping Grapes good for six months in the year, is quite as important a point of practice as that of growing them during the other six months. The fruit is, moreover, of more value during the first three months of the year than at any other time.

Knowsley. JAMES FREEMAN.

TAYLOR'S COMBINED HOT-WATER PIPE.

THIS new hot-water pipe has been invented by Mr. W. Taylor, of Nursling, for the purpose of heating, ventilating, and vaporising horticultural structures at one and the same time. The houses in which it is used, admit of being constructed with fixed sashes—no small advantage in regard to the cost of construction; they simply require an air-shaft, fixed at one end and carried up above the roof, to produce the vacuum impulse, by which the body of the atmosphere may be continuously changed. It consists of an ordinary 4-inch hot-water pipe (*a*), on which is cast an air-and-vapour chamber (*b*), provided with two apertures, one to admit a 2-inch tube (*c*), for the supply of fresh air, to be carried through the external wall, or connected with an air drain inside the house; the other an opening (*d*), for the continuous discharge into the house, night and day, in fair weather and foul, of a stream of heated air, which may be either dry or moist, according as the chamber is or is not charged with water, the latter when required being supplied by the aperture *d*. The air shaft above referred to, serves for the egress of the heated air, the place of which is supplied by that drawn through the pipes from the external atmosphere.





The advantages to be derived from the gentle stream of pure, fresh air, which is thus constantly carried into the house, are well known to practical gardeners; and Mr. Taylor, who cultivates Winter Cucumbers most extensively and successfully, attributes his success in great measure to the use of this mode of heating and ventilating his houses. It is intended that these pipes should be introduced along the whole length of the house, each pipe having a communication with the external air. The cost, we understand, would be about 20s. each pipe, against which would have to be set the economy of construction arising from having the sashes everywhere fixed; while the advantages secured by additional vigour in the plants, and more perfect colouring and flavouring in respect to flowers and fruits, deserve also to be taken into account.

The principle of this invention, so far as regards ventilation, is very similar to that of the plan proposed by Mr. W. Thomson, in which a perforated sheathing to the hot-water pipes was made to communicate with the external air, and thus supply a steam of fresh warmed air. A plan similar in principle has also been devised by Mr. Stuttle, of Shrewsbury. We understand that Mr. Taylor's plan has been for some time in practical operation in his garden at Nursling, that it answers admirably, and that it may there be seen in operation. T. M.

MONTHLY CHRONICLE.

THE Great Metropolitan Flower Shows of 1868 are now for the most part fixed. The Royal Botanic Society comes first with a two-days exhibition on the 27th and 28th of May, followed by others of similar duration on the 17th and 18th of June, and on the 1st and 2nd of July. The Royal Horticultural Society has a four-days show, to open on the 2nd of June, on which occasion, we believe, tender plants may be removed after the second day; a Special Prize and Variegated Zonal Pelargonium Show on the 16th and 17th of June; and a Rose Show on the 30th of June. In addition, the latter Society holds three Spring Shows: on the 14th of March, 28th of April, and 9th of May respectively, and also a Great Provincial Show, at Leicester, from the 16th to the 21st of July in connection with the Meeting of the Royal Agricultural Society. The National Horticultural Exhibition at Manchester is to open on the 29th of May, and close on the 5th of June, and will be on a very extensive scale.

—— THE once famous Botanic Gardens of Calcutta must now be numbered amongst the things of the past; for what of their contents resisted the force of the cyclone of 1864 have been swept away by that of the 2nd of November last, together with the rich and varied collections procured in the interval, by Dr. Anderson the talented Superintendent.

—— SAMPLES of a new Sprouting Cabbage have been sent to us by Messrs. Peter Lawson & Son. It is the result of a cross between the Brussels Sprouts and a Cabbage, and produces a distinct cabbage head of the Sugar-loaf form, while the stems are thickly feathered with sprouts, which form diminutive cabbage heads. Both sprouts and heads are excellent when cooked, and have a mild cabbage flavour. If its habit can be fixed, this Cabbage will be a first-class and most useful vegetable.

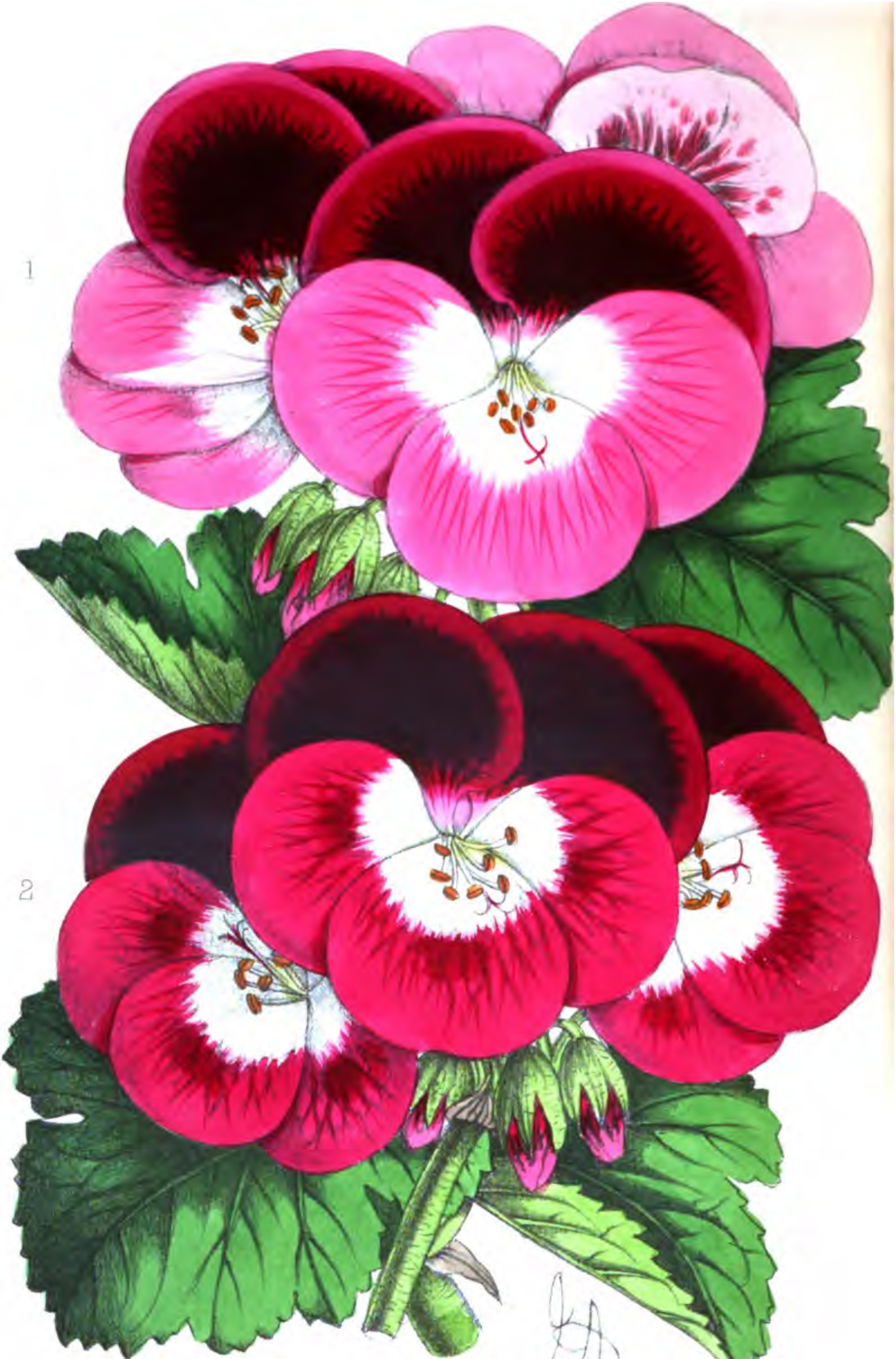
—— **Mrs. Pince's** Black Muscat Grape, which has in former years taken a position as one of the very best of high-flavoured late-keeping Black Grapes, has this season kept up its well-won reputation. The samples which have been sent to us, were not fully ripe, nor so well coloured as we have seen this variety, but their quality was, nevertheless, most excellent. With this, the Madresfield Court, and the Royal Ascot, we shall have acquired three most valuable high-flavoured late black Grapes.

—— **Testimonials** have recently been presented to the following gentlemen—namely, to **Mr. David Mitchell**, on his leaving Hamilton to commence business as a nurseryman and seedsman in Edinburgh. The present consisted of a timepiece in marble, and also a tea and coffee service, with tea tray and salver. The fine new garden at Hamilton, with its extensive ranges of glass houses, has been formed under Mr. Mitchell's superintendence. To **Mr. Daniel Nash**, who has held the office of Chairman of the Association of Seed Merchants for twenty-one years. The testimonial consisted of a silver-gilt dessert service, of four corner pieces with a plateau, on which was engraved an appropriate inscription.

Obituary.

—— **Science** has just lost one of her most worthy sons in the person of **Dr. Daubeny**, the Professor of Botany and Rural Economy in the University of Oxford. He was born in 1795, and was educated at Winchester, whence he proceeded to Oxford, and became early attached to chemical and geological studies. In 1834 he was elected to the Professorship of Botany, and soon began to apply his chemical acquirements to the elucidation of vegetable physiology. In 1836, published an essay on the Action of Light upon Plants, which must ever be considered not only as one of his most important works, but also as one of the most valuable publications on the subject of vegetable physiology. In this paper certain facts were published which are now so generally assumed to be correct, that their discoverer is overlooked except by the curious in matters of scientific history. These facts, in brief, are, that the luminous portion of the spectrum (the yellow and the green rays), are the most powerful in promoting the exhalation of oxygen gas from the green parts of plants, and, indeed, in stimulating vegetable life in general. The Oxford Botanic Garden, which was under his direction, was greatly indebted to his munificence. He died at his residence in the Botanic Garden, on the 13th ult., and was buried in the chapel of Magdalen College, of which he was Senior Fellow.

—— **Mr. William McNeill**, for many years Gardener at the Chief Secretary's Lodge, Phœnix Park, near Dublin, died on the 26th of November last, at the age of forty years, leaving a widow and young family. He was trained in the gardens of Taymouth Castle, and has rendered the garden of the Chief Secretary famous for the grand collection of specimen stove and greenhouse plants which it contains.



1. Emperor 2. Rob Roy

NEW PELARGONIUMS.

WITH AN ILLUSTRATION.

GREAT as have been the advances made towards perfection in the large-flowered section of this extensive and most useful family of popular garden flowers, we do not yet appear to have reached the limit, for finer and still finer varieties are year by year produced. Sometimes the advance is in size, sometimes in colour, sometimes in the general *ensemble* of the flower; but scarcely a season passes by without leaving us one or more varieties which we can point to as superior to those already known; and a glance at the accompanying plate will, we think, show that the year 1867 has nobly contributed its quota to the general improvement.

In EMPEROR (*fig.* 1), we have what is in our opinion the premier flower of the season; for in regard to its size, its symmetry, its colouring, its outline, and its centre, it approaches as nearly as it seems possible to attain towards perfection, and it appears to have also the constitutional vigour which is necessary to secure the full development of these good qualities. The variety must be classed among the salmony-rose sorts—a group which contains many other kinds of remarkable beauty. ROB ROY (*fig.* 2), is quite distinct in colour, being one of the purplish-rose group; it also is a flower of first-class properties, not so large as Emperor, but in regard to form and colouring equally perfect. Both sorts have gained first-class certificates at the hands of those lynx-eyed and severe critics—the London censors of flowers, which is a sufficient indication of their merit.

T. M.

THE LARGE-FLOWERED PELARGONIUM.

FOR some time past the floral periodicals have said but little on the subject of this branch of the Pelargonium family, perhaps owing to the wide-spread popularity of those adapted for bedding. Nevertheless, I can assure all who love greenhouse flowers that the improvement of the former has not stood still, but that at no time during the last thirty-five years, for which time I have cultivated this queen of the greenhouse, has the improvement been more marked and rapid. I well remember the first example of the "clear white eye," and the pleasure with which the advance was received; but it is only recently that this now indispensable point has been obtained, in some of the most important strains of colour—for instance, in the purple, as represented by Diadem, and in the scarlet or orange as represented by that very fine flower named Charles Turner. The size is another point in which great progress has been made, as also in form, smoothness, and substance as well as quality of petal.

It is just twenty years since the FLORIST was commenced, and I should like to see the plate of Pelargoniums—the leading Pelargoniums of that day—issued with the first number, exhibited at the next May and June shows along with such flowers as Mary Hoyle, Progress, Congress, William Hoyle, Example, Victor, Royal Albert, &c., &c. The comparison would be very instructive, and I shall be surprised if the improvement is not universally pronounced to be wonderful.

The Pelargonium family includes so many distinct forms that we are liable to fall into confusion in speaking of them. I have heard the "large-flowered" section spoken of as "*show*" varieties but this term is not distinctive. If all the groups are to be equally called Pelargoniums, I see a convenience, at least, in adopting for these, the sectional name of Large-flowered.

Reading. G. W. F. HOYLE.

CANNAS IN FLOWER GARDENS.

AS bedding plants I am of opinion that this race of plants is destined to play an important part in modern flower gardening. The cultivation of Cannas is simple, and they are, moreover, rapidly increased by division of the roots, as well as from seed; but when in possession of a few old stools the former mode is preferable. We had one large bed in the flower garden here this season, edged with large plants of *Centaurea ragusina*, which looked well from the day it was planted until frost marred its beauty. I winter my plants in a warm house without pots, and in February divide them, and grow on rapidly until bedding-out time.

Wrotham Park, Barnet. JOHN EDLINGTON.

THE OSBERTON SWEET-SCENTED FLOWER GARDEN.

IT is to be regretted that the present style of flower gardening, with its gorgeous masses of colour, excludes most of our favourite fragrant plants from being employed in it, for as a rule they are not effective enough to be made use of for massing purposes. Yet a garden wholly without perfume, is like a Pine Apple without flavour—beautiful to the eye, but worthless to the taste. Such a flower garden, therefore, though certainly pleasing to the eye, loses much of its interest from the want of perfume. Now, although under the present style we cannot make use in the parterre of many of our most fragrant plants, yet we may at least have some retired spot where these may be planted and fully enjoyed. At Osberton we have a separate garden, the exact counterpart of the coloured oval panel at Witley Court, set apart for sweet-scented flowers and plants, a description of which may not be without interest.

This Hortus odoratus is enclosed by a Yew hedge, and is entered at either end by a neat iron gate, leading to which some neat trelliswork is fixed to form an arch, over which the Honeysuckle and Jasmine are entwined. Through this arch the visitors must pass before entering the garden. On either side of the walk, beneath the trelliswork, is a hedge formed of Aloysia citriodora, or the Sweet-scented Verbena. To the right and left of the gates lines of mixed Sweet Peas are planted to increase the odour; these are placed outside in consequence of not being of a suitable height to harmonise with the growth of the plants inside. The design, which consists of fifteen flower beds, some fancy Box embroidery, and coloured walks, is at all times pretty, and these coloured walks, to a certain extent, enliven the whole garden. Next to the Yew hedge is a flower border, all round; between this and the design grass is laid down; and at either corner three poles are raised and covered with Honeysuckle and Jasmine, which form perfect pyramids. A border surrounds these pyramids, planted with Moss and Cabbage Roses, Musk, &c. In the centre of the design is placed a piece of fancy ironwork, forming an umbrella, which is covered with Jasmines, Honeysuckles, &c. All the beds are planted for effect so far as this can be carried out, and in filling them and the borders, most of the following plants have been and will be used—viz.:—

Stocks.
Mignonette.
Cloves.
Pinks.
Violas.
Heliotropes.
Sweet Jasmine.
Sweet Briar.
Humea elegans.
Sweet Sultan.
Agrimony.
Helichrysum fragrans.
Sweet Alyssum.
Sweet Scabious.
Wallflowers.
Lavender.
Daphne odora.
Thyme.
Night-smelling Stock.
Aloysia citriodora.
Sweet-scented Pelargoniums.
Tuberoses.
Lily of the Valley.
Azaleas.
Liatris odoratissima, &c., &c.

This garden has proved quite a success, and is highly appreciated by all visitors to Osberton. Indeed nearly one and all of them term it Fairy land. Seats are placed in the garden, so that those who prefer fragrance to beauty may sit and have their fill.

Osberton Hall Gardens, Worksop. EDWARD BENNETT.

AËRIAL ROOTS UPON VINES.

MR. WIGHTON'S further remarks upon this interesting subject (see vol. vi., p. 266, of our former series), necessitate my again referring to it. I had simply discussed the question as to what was the probable cause of these air roots upon Vine stems, more immediately in connection with a very singular and prominent example thereof growing in the fine span-roofed vinery at Chiswick; and I did not hesitate to question Mr. Wighton's views, as being opposite to my own, with the single object of throwing as much light as possible upon a subject, the physiological bearing of which seems enshrouded in so much doubt and uncertainty. The inference I had arrived at was, that aërial roots, emitted more or less profusely from any Vine, had a more or less injurious effect upon the plant—being, in fact, caused by a want of reciprocity between the roots, and the exterior or leaf surface.

The able paper by Mr. Cox (p. 265), fully confirms all I have said, in a manner that I could not have hoped to attain to. Singularly enough, Mr. Wighton brings in the Bramble and the prop-like roots of the famed Banyan, wherewith "to prop up" the views to which he so staunchly adheres. I am prepared to assert that the least-ripened, most imperfectly developed wood—wood of recent formation, in fact—is that alone which freely and spontaneously emits or pushes forth roots—wood, to use Mr. Wighton's own words, "growing in the shade," or "creeping amongst dank grass;" and, further, to express my belief that an ill-ripened coating of bark of the previous season, whether upon young or old Vines, may even yet have something to do with these aërial roots. Will any one say that ill-developed, sappy shoots are fitting illustrations of the well-ripened wood which gardeners delight to secure? "Hard as flints," I have often heard more than one of the craft say, in contemplating a well-grown and well-ripened house of "Vine wood;" and flints are as likely to emit roots profusely as are such rods, so ripened. To bring a few desultory examples, which may casually sprout forth in any house, to bear upon the subject, is, I take it, beside the argument, especially in view of such an example as that alluded to above, and other instances, which are many, where these roots are formed, to the great disfigurement of the house, and the concern of gardeners young in the practice.

Digswell. WILLIAM EARLEY.

MR. COX says, "So far as my experience goes, and it has been obtained under widely differing circumstances of climate and soil, I am of opinion that one of the primary causes which induce the emission of roots from Vine stems is the inequality of temperature between the medium in which the roots and branches are placed." Now, we all know that in a legally constituted court of justice the evidence of mere opinion, however skilfully handled by the pleader, cannot influence the decision of an intelligent judge and jury; they would, in the absence of facts, leave the case *in statu quo*. Unsupported opinion only amounts to a proofless persuasion or uncertain knowledge of a subject. It would, then, be madness for us to depend upon the fitful emotions of imagination. We cannot deduct from them, and were we to do so, the conclusions must not be classified with ascertained truths. If it is true, as Mr. Cox believes, that the production of roots on the stem is caused by an undue depression of heat in the soil, an excess of water, or an excess of drought, and that the appearance of spongioles in this quarter is purely a secondary matter, and that they are called into existence merely to sustain a paralysed system, will he explain why our pot Vines commit the same irregularity? We usually begin to force them between the 20th of October and beginning of November. They are grown in narrow houses about 9 feet wide, in which is a pit, the bottom heat being supplied by two 3-inch pipes. These are covered to the depth of 15 inches with stones, upon which are placed tree leaves as plunging material. The temperature of the bed is regulated by an underground thermometer, which is allowed to range between 78° and 82°, so nothing is wrong on that score; and as the roots are constantly open to inspection, they are never drowned with water, nor frizzled by drought. Still roots are produced abundantly on the stems, though the proper roots extend through the bottom of the pots and run through the greater part of the bed.

I might go on multiplying indisputable evidence in support of what I have heretofore maintained—namely, that the production of roots on the stem of early forced Vines is due to a humid warm atmosphere; while by the withdrawal of moisture they nearly if not totally disappear. There are some varieties of the Vine which, whether propagated from eyes or cuttings, emit roots more freely than others. These will be found almost invariably to produce spongioles from the stem.

I beg to assure Mr. Cox that no one estimates the value of Dr. Lindley's *Theory of Horticulture* more than I do. I have made both editions a subject of study, and feel persuaded that no book has yielded so many contributions to assist the practical gardener; but, with this admission, I am not prepared to believe all Dr. Lindley's statements, and reject none more decidedly than the one now under consideration. Great minds have erred, and do err; hence we must not assign to any mortal the attribute of infallibility. There are cases where the evidence of certain truths lies beyond our apprehension, and cannot be accurately measured; but no mystery surrounds the subject of our debate, as the disputed point can be proved by direct experiment.

The Gardens, Tortworth Court. ALEXANDER CRAMB.

CULTIVATION OF THE ACHIMENES.

THE Achimenes is not so much grown as it was a few years back, though it is very beautiful as well as very useful for conservatory decoration. I trust, therefore, that the following hints may induce many cultivators again to adopt it for this purpose.

I may observe that every boiler should be set with firebricks, not only because they do not burn out so fast as common bricks, but because they economise fuel. The bottom of the boiler should also be set one or two or more courses of bricks above the bars, for the bottom is usually burnt through first, if set level with the bars, from the clinkers collecting and fixing thereon. Moreover, none of the pipes from the boiler should be exposed to the action of the fire, for if so they will probably burn through before the boiler is worn out. Once on taking out a boiler, I found the draw-off pipe to be a leaden one carried through the flue; the fire took no effect on it until it got choked, and then of course it melted away.

It is a very great mistake to put into a house the smallest quantity of pipe supposed to be sufficient to heat a given space to a certain temperature. It may answer very well under ordinary circumstances, but probably at some particular time when extra heat is required, an extraordinarily cold night may occur, and then either the temperature must be too low, or we must fire to such an extent as to injure the plants.

The Cornish boiler is a very useful and easy one to manage, if properly fixed. It will consume any kind of fuel; but if not in constant use I consider it corrodes more than some other kinds. I may here remark that any hothouse boiler in constant use will last longer than if it were used only a portion of the year, for even if the water is run out the rust will still act both inside and outside.

I have yet to be convinced that hollow furnace bars containing water have any advantage over loose solid bars; but have proved that by keeping the ashpit filled with water the bars will last at least three times as long as with the ordinary dry ashpit. To test this, I had the ashpits in all the conservatory fireplaces here, built in cement, and kept constantly filled with water. This is the third season since it was done, and the bars are apparently as good as ever, while previously many had to be renewed annually. In new work it is the best plan to have iron pans cast to fit the ashpit; and it is also advisable to have a water pipe with tap in or near the fireplace, for otherwise the filling of the pan will sometimes be forgotten. The water appears to prevent clinkers from forming, owing, perhaps to the cooling action of the steam continually rising, so that with moderately good stoking, the draught is always good.

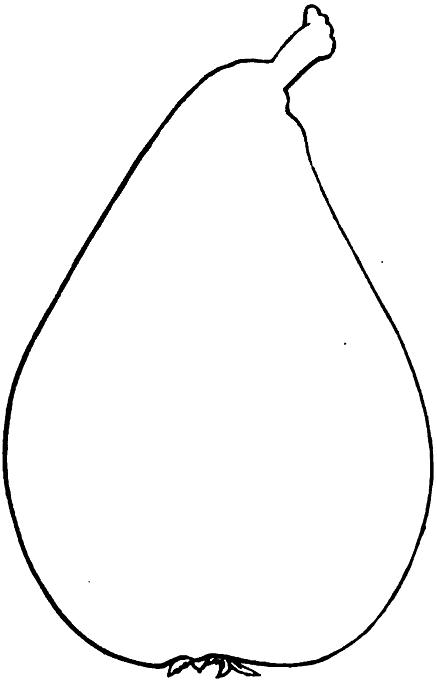
I consider the Saddle boiler one of the most useful for general purposes, and it can be adapted to any set of pipes already fixed. There have been many modifications and so-called improvements of this form of boiler, but I prefer the original—not that I consider it impossible to improve on the type, but alteration often complicates a simple original. The chief point in this, as in other boilers, is to expose a large surface to the fire, which can be done in the plain saddle, if properly set.

In fixing boilers there should never be any stone or iron exposed to the action of the fire, except the part containing water, and the furnace bars, for they will soon burn away, especially if coke is used as fuel. We have thirty-six fires here, in which coke is burnt, and the fireplaces are all set with firebrick.

Chatsworth. JAMES TAPLIN.

BEURRÉ DE JONGHE PEAR.

AMONG the varieties of Pears that are sure to occupy a permanent place in our collections of hardy fruit trees, that which bears the name of M. De Jonghe, of Brussels, must without doubt become one. As yet it is but little known, not having, so far as we are aware, been ripened in this country; but from what we have seen of it in Belgium, and judging from fruit grown in the neighbourhood of Brussels, we have no hesitation in speaking of it as one of the finest Pears in cultivation.



The fruit is very handsome in its shape and outline, being even and regularly formed. The skin is yellow, very thinly covered with bright russet, which gives it a golden appearance. The eye is open, and set in a shallow basin. Stalk very short, inserted on the end of the fruit. Flesh yellowish, very tender, buttery, and melting; as much so as in Marie Louise, but far richer in flavour, and with a fine perfume. It ripens in the middle of February.—R. H.

SOME OF THE BEST CARNATIONS AND PICOTEES.

FEW, if any, of our hardy florists' flowers are more deservedly admired than the Carnation, and its allies the Cloves, Picotees, &c., and yet the cultivation of them seems to have got very much in the background, which may arise from want of encouragement for them at the meetings and exhibitions of floral societies. It was pitiable to see how wretchedly they were provided for last year at the Bury Show of the Royal Horticultural Society, and it is to be hoped that at the Show to be held this year at Leicester—the district being a sort of centre for these flowers—some better encouragement may be held out, either by the Society or amongst the special prizes which are being got up in the neighbourhood. Moreover, as the show takes place about the middle of July, which will be in the height of the Carnation season, this offers a further reason for hoping that a fitting provision may be made for their exhibition. Amateurs' classes should at least be provided for twelve Carnations, and for twelve Picotees; and nurserymen's classes for twenty-four of each. An open class for six of each in one group, as at Bury, gives no opportunity to growers, as many who cultivate the one flower do not grow the other.

The following descriptive notes of some of our best varieties may be useful to your readers:—

CARNATIONS—*Scarlet Bizarres.*

Captain Thompson (Puxley): broad smooth petal, and well marked, very fine.

Dreadnought (Daniels): bright and beautifully marked, very fine.

Howard (Puxley): large, very bright and distinct.

Lord Derby (Heap): a nice smooth well-marked flower.

CARNATIONS—*Crimson Bizarres.*

Eccentric Jack (Wood): fine broad smooth petal, and very fine shape; large, beautifully marked, and quite distinct; extra fine.

Graceless Tom (Wood): a fine full-sized flower, good smooth petal; well marked, and very constant.

Grand Master (Schofield): a fine smooth well-marked flower.

Premier (Puxley): a good full flower, smooth and beautifully-marked petal; very distinct.

CARNATIONS—*Pink and Purple Bizarres.*

Falconbridge (May): fine, large, smooth, and well marked.

Shakespere (Puxley): a very fine smooth flower, and nicely marked.

Sarah Payne (Ward): a nice flower, and very distinct.

Captivation (Taylor): medium size, well marked, but rather faint in colour.

CARNATIONS—*Purple Flakes.*

Dr. Foster (Foster): fine smooth petal, good white, very constant, and beautifully marked.

Earl Stamford (Elliott): a very constant good useful flower.

Florence Nightingale (Sealey): a very large full flower, well marked, and very distinct.

True Blue (Taylor): a fine large flower, very smooth finely shaped petal, good white, and very beautifully marked with quite a novel shade of colour.

CARNATIONS—*Scarlet Flakes.*

Annihilator (Jackson): a large bright beautifully-marked flower, fine smooth well-shaped petal, good white, and very constant.

John Bayley (Dodwell): a very fine bright well-marked flower.

Splendour (Kaye): fine large flower; very bright, and well marked.

William Cowper (Wood): a fine full-sized flower, nicely marked, with very bright scarlet.

CARNATIONS—*Rose Flakes.*

James Merryweather (Wood): a large bold flower, very bright, and well marked.

King John (May): very large fine smooth petal, beautifully marked with very bright rose.

Merrimac (Wood): a very distinct, fine, large, well-marked flower.

Samuel Moreton (Addis): a very large, full flower, fine smooth petal, and well marked; very robust habit.

Picotees—*Red-edged.*

Exhibition (Elkington): heavy edge, moderately full, large, and very fine.

Forester (Taylor): very heavy edge, moderately full, very attractive.

Lauretta (Smith): light edge, large, fine full flower.

Mrs. Brown (Headly): very bright heavy edge, large, and fine.

Mrs. Reynolds Hole (Turner): light edge, fine smooth petal, good white, a fine large flower.

William Summers (Simmonite): heavy edge, very smooth petal, moderately full, and very constant.

Picotees—*Purple-edged.*

Bridesmaid (Simmonite): light edge, fine, large smooth petal, the white very pure, without the slightest bar.

Ganymede (Simmonite): light edge, fine large petal, good substance, and very pure white.

Jessie (Turner): medium edge, very fine large flower, smooth broad petal, of great substance; very fine.

Lady Elcho (Turner): light edge, very smooth broad petal, good white, large, and very constant.

Mrs. Summers (Simmonite): heavy edge, very fine smooth petal, and the edge very solid, without spot or bar; very fine.

Mary (Simmonite): light edge, large full flower, very smooth petal, good shape, and very distinct.

Picotees—*Rose-edged.*

Flower of the Day (Norman): heavy edge, very bright, good smooth petal, very constant and distinct.

Miss Williams (Norman): heavy edge, very smooth fine petal, full size, and very distinct.

Miss Sewell (Kirtland): light edge, very fine smooth petal, good white, and very constant.

Miss Wood (Wood): light edge, fine large full flower, and very distinct.

Scarlet Queen (Wood): heavy edge, very bright, constant, and most attractive.

Lucy (Taylor): light edge, large and moderately full, good smooth petal, fine white, without the slightest spot or bar; very fine.

Royal Nursery, Slough. Charles Turner.

AMERICAN BLIGHT.

AMERICAN BLIGHT, the name given to the woolly aphis (*Eriosoma lanigera*), is a most inveterate enemy of the Apple tree. It makes its appearance in the crevices of the branches in the form of white down, which is composed of a great number of minute woolly lice, and these, if allowed, increase with fearful rapidity, and produce a sickly and diseased state of the whole tree. Fortunately, the insect is easily destroyed. When, however, a whole orchard or even a whole tree is infested, it is by no means an easy task to completely eradicate it. The great point is, to attack it as soon as possible after it makes its appearance; it is then easily destroyed, but if allowed to overrun the whole tree before it is attacked, then it is not an easy matter to thoroughly dislodge it.

There are many recipes for destroying it, all more or less effective. Perhaps one of the most effectual is to wash the infested parts with dilute sulphuric acid, formed by mixing ½ oz., by measure, of the sulphuric acid of the shops, with 7½ oz. of water; this should be rubbed into the part affected by means of a piece of rag tied to a stick, the operator being careful not to let it touch his clothes. Coal tar, turpentine, pyroligneous acid, vinegar, &c., if rubbed well into the crevices with a painter's brush, will all destroy the insects. Oil rubbed into the infested spots with a small stiff painter's brush is very safe, and effectual in freeing the trees of this insect. This is the plan I adopt myself, and which I would recommend. Of course, the whole of the tree should not be painted with the oil, only the clefts and crevices of the branches where the insect is lodged; and this should be done as soon as it is perceived on any tree, for the labour then required is but little, while if it is allowed to spread, the labour is considerable, and the difficulty of eradicating the insect proportionately great. The oil should be well rubbed into the places where the insect may be found, but no other part of the tree should be painted.

Stourton. M. SAUL.

FRANCISCEA CONFERTIFLORA.

WHEN well managed, this is one of our finest stove plants. By growing two or three plants, forwarding some and retarding others, it may be had in bloom in succession for as many months; and its fine heads of purplish-mauve flowers and its laurel-like leaves, which contrast well with other plants, make it valuable for conservatory decoration.

Those who wish to grow it successfully should at once procure a young plant in a 48 or 32-sized pot. If it is well rooted, shift it into a pot one size larger, using three-fourths of good fibry peat, broken to pieces but not sifted, and one-fourth of loam and leaf mould, in equal proportions; add to this a liberal quantity of sharp silver sand, and mix the whole well together before using. An inch in depth of broken crocks should be placed in the bottom of the pots, and this quantity must be increased in depth at each successive potting in proportion to the size of the pot. Over the crocks place some rough fibry peat to prevent the drainage from becoming stopped by watering, for without efficient drainage good cultivation is impossible. Pot moderately firm, and apply water until it runs out at the bottom of the pot. The plant should then be placed in a temperature of from 60° to 65°, and be syringed twice a-day. The roots must not be allowed to suffer for want of water. In a short time young shoots will begin to push; these should be pinched off above the fourth or fifth leaf. By this time the roots will have reached the sides of the pot, and a more liberal shift should then be given—say into a 16-sized pot—and a second growth in the same season will be the result. This should be pinched off, as before directed, and syringing continued till the end of October, about which time probably the flower-buds will begin to push from the eyes at the top of the second growth. After these make their appearance the plants should be syringed only once a-day, when the weather is bright, but not at all in dull cloudy weather; and as soon as the flower-buds begin to open, discontinue syringing entirely, until the plant is out of bloom.

If the plant is removed to a temperature of from 45° to 50° as soon as the flowers begin to expand, they will be larger and much better coloured than they would have been if kept in a higher temperature. When the plant begins to show signs of growth, repot; at the same time reduce a little of the old ball, though the roots must by no means be injured in this operation. The plant will now require but one shift in the year, and but one growth in each season must be expected after the plant has been allowed to bloom, or its energies will become overtaxed, which will lead to premature decay.

Somerley Gardens. H. CHILMAN.

ON PLANTING FRUIT TREES.

DOCTORS differ, and so do gardeners sometimes. Thus the shallow planting of fruit trees has been so much belauded, that it may appear absurd to write against it; but having had some experience in deep planting, and having seen the best results attending it, I venture to say a few words in its favour.

In the first place, I hold that it is altogether wrong to plant trees on or near the surface, when the ground is dug and cropped. The digging for the crop cuts the roots, while the crop itself takes all the moisture from the soil, and the result is unhealthy trees, full of all kinds of insects. Then, without mulching with rotten manure, the roots die under the influence of drought in summer, or of cold in winter. Roots naturally grow downwards; and the advice on all sides is, "Assist Nature as far as possible." Now, by encouraging the roots to the surface of the soil, we are thwarting Nature, besides incurring much extra expense every year in labour, all to no good purpose.

What I have done, and do, when I plant fruit trees, is to put their roots in their natural position—deep. The first expense is the greatest; but it will be the least in the end, and will give more lasting satisfaction. I dig a hole, 18 feet in circumference and 3½ feet deep, keeping the good soil on one side, and wheeling the bad, if there is any, away. This hole I fill with the best soil I can get, and I am particular to have it fresh. I prepare a quantity of road scrapings, weeds of all kinds, and turf from the edgings of road and walks. When a year mixed, this with some burnt soil and horse dung added, makes good soil for fruit trees. I fill the holes, 2½ feet deep, with this compost, and beat it hard when filling with a wooden "tup"—a piece of wood 9 inches in diameter at the bottom, 2½ feet long, tapering to 5 inches at the handle at top. On this soil I plant the trees, Pears, Apples, Plums, &c., large or small (as the hole will hold a large tree), taking care to spread the roots on all sides, and to fill in amongst and around them with about two barrowloads of leaf soil to give them a good start. The remainder is filled in with the same soil as before, sloping to the stem of the tree. One good watering in May or June is all that will be required. It will be seen that at this depth the roots are out of reach of the spade, and are in their natural position—moist in summer, and dry and warm in winter. This is to be done on soil well drained, 4 feet deep.

Wall fruit trees in general are placed under bad conditions. There is often concrete instead of good soil beneath the roots, and the borders are dug up, and not unfrequently ridged in the winter months; while the drip from the wall falls on the stems and roots. What can be expected under such management, but diseased trees, and little or no fruit? Deep planting, with good soil instead of the concrete, would put the roots in their natural position, warm and dry, and out of the reach of the spade. Our fruit trees, from which we expect so much, are not in so good a position as the common forest trees, with respect to their roots. We must either give up digging and cropping the fruit-tree borders, or else put the proper soil down, for the roots should be below, instead of on the *top*.

I hope soon to see a great reform in planting fruit trees, by putting the roots in their natural position—deep and dry. We labour hard, and at great expense, every year, to get the roots to the top by mulching, watering, &c., just in order to get them killed in winter by cold and wet. We know that the ground is warmer at 2½ feet deep than at 1 foot, and we ought, therefore, to keep the roots deeper in order to keep them warmer, for they have work to do in winter as well as in summer. We must dig deep to find the gold; and we must plant deep and dry to find fruit. If we do this, we can truly say we are assisting Nature, by putting the roots in their natural position—deep.

Sudbrooke Holme, Lincoln. GEORGE McBEY.

ON PHLOXES.

AS I have for several years past been more successful with these than most of my acquaintance, and have been fortunate enough to gain first honours wherever I have shown them, I will endeavour to give a little practical information for the benefit of others. When well grown, Phloxes are generally admitted to rank amongst the finest of hardy herbaceous plants, continuing in bloom, as they do, from the end of June, or beginning of July, according to locality, until cut by sharp autumnal frosts. Last season I exhibited some even as late as November. They are of easy culture, and for the most part extremely hardy, flourishing in almost all situations; they are besides almost endless in variety, singularly attractive, and delicately fragrant.

I prefer to grow them in beds about 40 inches wide, planted in three rows; the *Suffruticosa* or early bloomers, and the *Decussata* or late bloomers, each by themselves. The principal care needed is not to plant them in manure, unless it be very old, in fact, reduced almost to soil, and then they should have a good portion of coarse sand. They do well in sandy loam, with a little leaf mould, wood ashes, and sand, and top-dressed with manure, or provided with plenty of liquid manure during dry weather. They are very appropriate for shrubbery decoration.

When they are wanted for exhibition purposes, care must be taken not to have more than three or four stems to each plant; if there are more the weaker ones must be cut away early, and, should propagation be desired, these will strike freely under a hand-glass or small frame. Cuttings from the earlier kinds, struck in May, make fine specimen spikes or trusses in September or October, if attended to, and planted out in a nicely prepared bed as soon as struck, shading them a little from extreme heat. Many persons attempt to grow them in greenhouses; but in such situations they are apt to become drawn, and never look so healthy and fine, or develope their colours so well as those grown outside. They have not many enemies, except rabbits and snails, which can be guarded against.

Those who wish to raise new varieties may do so by saving seed—which, however, is rather difficult to collect, and does not germinate freely unless a little bottom heat can be given to it. It should be sown in flat boxes, or seed pans, in January or February, slightly covered with sand, and kept moderately damp. As soon as the plants make four leaves they may be potted into small pots and kept in a frame, giving plenty of air during the day, until the latter end of May, when they may be planted out on a nicely prepared bed. They will most of them bloom in October, when the best and most improved varieties must be selected. A more general mode of propagation is to divide the roots. It is as well to do this immediately after they have done blooming. Some growers recommend dividing them with the spade; but this is wrong. They should be divided very carefully, care being also taken to see that none of the old stool adheres to the plant, but only the new fibre, and that they are as little injured as possible during the operation. These instructions will, I should hope, be sufficient; and as good varieties may now be had at from 4*s*. to 6*s*. per doz., no one need be without them long who has any particular desire for them.

In conclusion, I will give the names of a few of the best in each class for exhibition purposes. The late sorts generally possess the finest colours, though they are not so large as the others.

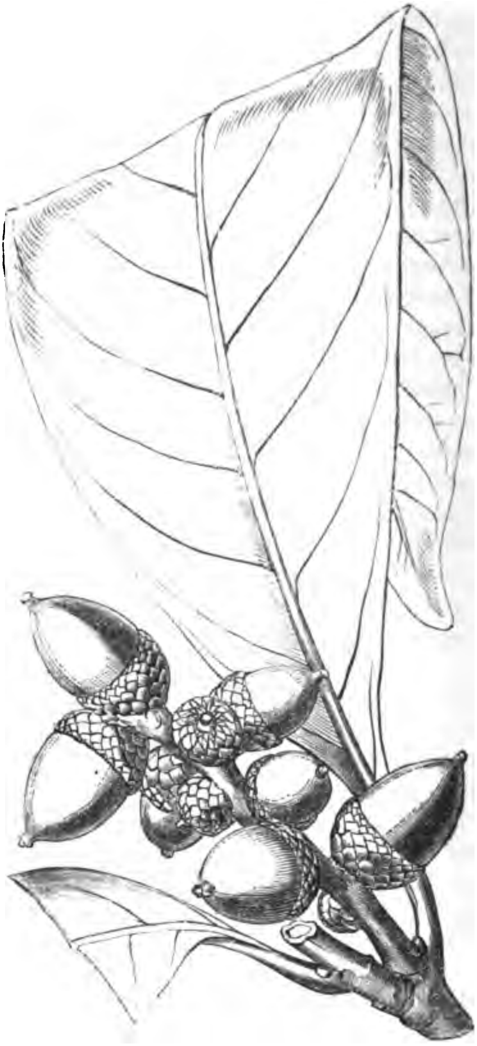
Early Bloomers.—Atlas, Addisonii, Duchess of Hamilton, Her Majesty, Lady Halliburton, John Bayley, Magnifica, Mrs. K. Howat, Miss Ogilvie, Miss Simpson, Miss Spedding, Mrs. Campbell, Mrs. Mitchell, Mrs. McGregor, Mrs. Scott, Mrs. McCall, Rosy Morn, W. W. Platt.

Late Bloomers.—**Admiration, Baron Martin, Boree, Careus, Compacta, Dr. Lacroix, Gloire de Puteaux, James Veitch, Liervallii, Madame Lierval, Mrs. Standish, Madame Prail, Monsieur Rollisson, President Morel.**

Winton, Manchester. JOHN WALKER.

QUERCUS GLABRA.

BEING quite hardy here, this beautiful Japanese Evergreen Oak is a most desirable ornamental tree. Nothing can be more beautiful than its bright shiny leaves, which are from 7 to 8 inches in length, and nearly the colour and size of those of Magnolia exoniensis; indeed at first sight, and when seen from a distance, the upper side of the leaf has very much the appearance of the Magnolia. Altogether, it is a lovely ornamental plant every day in the year; but though it has been in the country for the last quarter of a century, it does not appear to be cultivated to the extent that one would expect in the case of so charming and ornamental an evergreen; at least I have rarely met with good plants of it.



In the arboretum here, there is a fine large healthy tree, which has borne acorns for years past, also male catkins in abundance. The acorns are borne on longish spikes, from six to twenty or more growing on a sprig. They ripen in November and December, but I find it is a difficult matter to collect any of them in the ripe state, for the crafty jays have such a propensity for them, that they constantly watch for, and rummage out and devour every acorn, even before it is fully ripe.

Bicton Gardens. James Barnes.

CUTTING OVER PINE-APPLES TO INDUCE FRUITFULNESS.

YOUR readers will, many of them, be aware that Mr. Thomson, in his book on the Pine-apple, recommends cutting down those plants that at the proper time refuse to show fruit, as a means of inducing them to do so. And as far as my experience goes, the plan is a certain one, as the following instance will show. About eighteen plants of our late-summer-fruiting lot, which refused to throw up when wanted, were cut over at the surface of the pot about the end of the summer, potted very firmly in 12-inch pots, plunged in a bottom heat of 90°, and treated much the same as newly potted suckers for about a fortnight, when shading was discontinued and more air given. Several plants showed fruit about a month after potting, and by the end of November swelled off fruit, weighing from 3 to 4 lbs.—a weight scarcely equal to those that showed at the proper season, which I attribute to the lateness of the season, as they were Queens. The others continued to pop up at intervals till the middle of December, and swelled off, I am inclined to think, more kindly than is usual with Queens so late in the year. The last of them are at this date (January 8), just about out of bloom, and promise to be large fruit, and a welcome addition to our early summer Queens.

Under the most favourable circumstances Pines will sometimes refuse to show fruit at the proper time; but if the plants have been well exposed to the sun and air during their period of growth, and are well ripened, this will seldom occur to any serious extent, if care is taken to guard against a sudden rise of temperature when starting, which is almost certain to cause the plant to produce leaves instead of flowers.

Wortley Hall Gardens. J. Simpson.

SEASONABLE GARDENING HINTS.—FEBRUARY.

AN important time is this for the amateur and practical gardener. The plans and arrangements for the coming season should now be decided on; and this being done, every endeavour should then be made to push forward the work as much as possible, both in-doors and out-doors, before the busy spring time is upon us. Plants in pits and frames will begin to feel the influence of the increased solar light and heat, and will therefore require more air, especially in mild weather; they will also require more water, which should be given early in the day, so that the plants may get dry before night. The collection of bedding plants should be carefully looked over, and if the stock be not sufficient of any kind, preparations should be made at once to increase them, by putting some plants into heat, in order to encourage them to grow and produce cuttings. A small hotbed will be found very useful to receive cuttings, also fresh-potted plants. Pelargoniums may now be increased rapidly by cuttings. Spring-struck cuttings of Verbenas are generally best for summer bedding. Iresine, Lobelia, and many other plants are also rapidly increased by cuttings in spring. Pelargoniums in store pots and boxes should now be potted-off, and put into a little heat to make fresh roots. Air should be given freely to the plant houses in mild weather, and as the days lengthen the plants will require more attention in watering, and should therefore be looked over frequently, to see that none are suffering from want of it. Towards the end of the month make preparations for the general shifting of the plants ; get soils in readiness ; have plenty of crocks of different sizes broken ; and have all pots well washed.

All out-door work should be in a forward state, as the autumn and winter have, on the whole, been very favourable. Alterations still in progress should be pushed forward. Look carefully over beds of Pinks, Carnations, Pansies, &c., and if the plants have been loosened by the frost, make them secure. This is a good time to plant Roses. The soil should be trenched or dug deeply, and well enriched by manure ; when planted they should be well mulched, and the standard trees should be tied neatly to stakes to prevent them being moved about. Towards the end of the month the more hardy kinds may be pruned. Briars for budding may be planted. This is a good time to plant Alpine plants, which deserve to be much more generally cultivated than they are. Trees and shrubs may still be planted, but the sooner the better, as they require a good deal of attention to insure their well-doing, especially when the spring is dry and frosty, with cold winds.

The operations in the kitchen garden depend in a great measure on the state of the weather. But though little can be done if the weather be wet or frosty, still if, as sometimes occasionally happens, the weather is fine during the latter part of the month, and the soil dry, the most should be made of such an opportunity. A good sowing of early Peas and another of Broad Beans should be made ; also a sowing of early Horn Carrots, and of Parsnips ; and if the land be sufficiently dry during the last week in the month, a portion of the Onion crop may be sown. Cauliflowers, Cabbages, Savoys, Brussels Sprouts, Lettuces, and Radishes should be sown in beds on a warm border. Some round Spinach and Parsley may also be sown. Shallots and Garlic may be planted. Plant early Potatos ; it is best to sprout them in a little heat ; when this is done and they are planted on a warm sunny dry border they soon begin to grow, and if kept well earthed-up after they are above ground, they will in general be fit for use by the end of May in the open ground. They sometimes suffer from severe frost in May, but when kept well earthed-up, little material injury is done. Early Potato sets should be spread out thinly, and not left in heaps, which would cause the sprouts to lengthen and be easily broken when handled.

The pruning of wall trees should be finished as soon as possible, as the blossom buds of Apricots, Peaches, Nectarines, Plums, and Cherries will be fast advancing. Finish the pruning of Gooseberry and Currant trees, and dig over the borders. The young Strawberry plants in the fresh plantations will be more or less loosened by the frost, and should be made secure. I find the quickest and best way of doing so is to press them into the ground with the foot. I never could see they were injured in the least by this. Strawberry plants are looking well this season, and promise to yield a heavy crop.

Stourton. M. Saul.

WHY FLORISTS' FLOWER CULTURE HAS DECLINED.

SOMEHOW or other, we seem of late years to have gone backwards in regard to the old-fashioned florists' flowers, once so popular. Some of them, the Carnation, for example, are nearly lost sight of in the northern districts, though from what cause I am at a loss to determine. I am aware that many of the older growers are gone hence, and that there has not been a sufficient influx of younger ones to fill their places; and further, that some of those who are still living seem nearly tired out, which may probably, in a great measure, be accounted for by the want of the stimulant resulting from the infusion of young blood amongst the fancy. Other deterring causes exist in the case of the working portion of the florist body. Many who formerly used to have their work at home, are now obliged to go into factories. And then, in and about large towns most of the small gardens have been destroyed, having been taken up for building purposes, streets, railroads, &c., so that many of those who do imbibe the fancy, have now to take plots of ground where they can meet with them, and these in many cases lie two or three miles away from their homes. This is a state of things anything but favourable for the cultivation of florists' flowers; for it matters not what they are, whether Auriculas, Polyanthuses, Tulips, Pinks, or Carnations and Picotees, all require diligent daily, or, I might say, hourly care through their respective seasons, without which they are little more than a loss, and a disappointment to those who dabble in them. This I can speak to as a fact from my own bitter experience.

I have, in my time, been a grower of all the above-named flowers, and have tried many fancies, both in respect to soils and situations. My time and experience among these subjects have extended over half a century, and throughout that time I do not suppose any man living has ridden the hobby more diligently or with greater pleasure than I have done, and still should do, if I had the opportunity. For want, however, of a suitable situation, I have been compelled to abandon the cultivation of these flowers till now I have only a portion of one kind left—namely, the Tulip; and for several years I have not had the opportunity of caring for these as I ought, on account of their being miles away from my home. I may add that when one has reached his sixty-sixth year, as I have done, bodily infirmity is apt to interfere with pursuits of this kind.

What I have stated may be thought discouraging, though I know not why it should be. At any rate, I think the truth ought to be told. Moreover, if I am correctly informed, there is now some promise of a revival in the fancy. This no one would be more pleased to see brought about in earnest than myself, and no one can be more willing than I am to afford such assistance as my humble abilities and means may allow, in the way of advice to the young and inexperienced who may stand in need thereof. I shall therefore proceed to treat, hereafter, of the management of those old favourites, the Carnation and Picotee.

Huddersfield. J. HEPWORTH.

THE WINTER DRESSING OF ORCHARD-HOUSE TREES.

DRESS your fruit and orchard-house trees with a solution of Gishurst compound, 8 ozs. of the compound to a gallon of water. This is the confident recommendation of more than one acknowledged authority, and to doubt the soundness of the advice thus conveyed, may seem little short of heresy. Nevertheless, my observation and experience of the matter compel me to do so, though I do not wish to depreciate the value of Gishurst compound as a very effective application for the destruction of insect enemies, after they have left the egg state. It is, however, admitted that when used at the above degree of strength it will sometimes cause a few—and if a few, why not many?—buds to fall off.

Several years since, my confidence as to the efficacy of this winter dressing was shaken by the following circumstances. Two healthy Plum trees of large dimensions, trained to a wall facing the east, were during the summer found to be much infested by aphis or green fly; syringing was freely had recourse to, and the enemy was kept somewhat under, without, however, being entirely subdued; and during the winter which followed, one of the trees was unnailed, and very carefully dressed with the compound of the degree of strength mentioned above. It was also intended to dress the other tree in a similar manner, but other operations pressed, and this intended dressing was postponed, until it was found to be too late to be applied that season, and spring meanwhile arriving, both trees bloomed and set their fruit freely, and both were found to be infested with aphis, the tree which had been dressed, equally with the one which had not.

A solution of the compound—about 4 ozs. to a gallon of boiling water —was now made, and before this was quite cold it was carefully applied to the trees with a common syringe; and this application, without in any perceptible manner injuring either foliage or fruit, appeared to thoroughly free the trees from every appearance of fly. In about ten days it was again thought advisable to give another syringing with the compound, of similar strength; and this was followed by one or two syringings with cold water, which kept the trees perfectly clean during the remainder of the season; indeed they have never suffered seriously from insects since.

The winter following the summer just alluded to, the fruit trees contained in two large orchard houses at this place, consisting of Peaches, Nectarines, Cherries, and Plums, were divided into three portions. One portion was dressed carefully with Gishurst compound, 8 ozs. to the gallon of boiling water, applied when cold with a painter's brush. Another portion was dressed in a similar manner with the following composition:—Half a pound soft soap, and half a pound tobacco, boiled half an hour in a gallon of water, and to this was added half a pound sulphur, half a pound hellebore, one pint of fresh lime, and one pint of soot. The third or remaining portion was left undressed. In the following spring it turned out, as in the case of the Plum trees, that the trees which had been dressed, were in no respect freer from insects than those which had not.

These facts, I think, justify me in discontinuing the indiscriminate winter dressing of orchard-house trees, Vines, &c. I would nevertheless recommend your readers to try the experiment for themselves. Let them leave a few trees in each house undressed; and if during the following spring and summer they find them to suffer more from insects than those which receive a dressing, then by all means let them continue to winter-dress. I shall have more to say on this subject.

Culford Hall. PETER GRIEVE.

NOVELTIES AT FLOWER SHOWS, &c.

STILL another sport from that fine large-flowered *Chrysanthemum* Princess of Wales, making the third it has thrown. The one under notice is of a creamy white colour, of the incurved form, the base of the florets tinged with rosy lilac, and is, like its progenitor, a large, full, and handsome flower. It is named *Beauty of St. John's Wood*, and Messrs. E. G. Henderson & Son were awarded a first-class certificate for it at the Meeting of the Floral Committee on the 3rd of December last. Mr. George, of Stamford Hill, sent some blooms of his comparatively small-flowered golden sport from Hermine, which he has named *St. George.*

On this occasion Mr. Salter produced some forms of the curious new race of *Japanese Chrysanthemums*, seedlings from those sent home by Mr. Fortune, a few years ago. To four of them first-class certificates were awarded. Of these *Red Dragon*, cinnamon red, tipped with orange, large and full, and one of the best varieties; *Comet*, gold and orange buff; and *Wizard*, dark reddish cinnamon, the centre somewhat open, but a showy shade of colour, represent the "actinioid" type. The other certificate was to *Aurantium*, a clear golden flower with broad florets, representing the "flat or ribbon-flowered" type. *The Daimio* is another representative of this group, with silken rosy pink florets, but the individual flowers not so full as in the case of Aurantium. *Purpureum punctatum*, purplish rose spotted with pale flesh; and *Nagasaki Violet*, deep clear rosy violet, with yellow eye, the florets sometimes spotted with white, belong to the actinioid group. A very curious and novel flower, named *Tarantula*, represents the "radiate-flowered" type. For conservatory decoration these Japanese kinds will prove very useful; and as some bloom quite early, and others unusually late, a succession of blooms will be thus spread over a considerable period of the autumn and winter.

Bedders-out should make note of Mr. G. Smith's fine white-edged variegated *Pelargonium, Princess Alexandra.* Some small plants were shown on this occasion that were both fresh and striking, and, as a bedder, it has been tried with great success.

The principal novelties at the meeting held on the 21st of January were a stand of *Japanese Chrysanthemum* blooms from Mr. Salter, exhibited to show how late the blooms can be had; and some new fruiting *Solanums* bred between S. Capsicastrum and its hybrid variety, obtained by means of a cross with S. Pseudo-Capsicum. They were mostly great improvements of the originals. One of them, named *S. Pseudo-Capsicum Weatherillii*, was of erect habit, fruiting somewhat in clusters, the leaves elongated venose and wavy, and the fruit ovate, with a nipple-like point. The other, *S. Pseudo-Capsicum rigidum*, was of dwarf rigid bushy habit, with more of the aspect of S. Capsicastrum, but having larger, bluntish ovate leaves. In both the fruits were of the size of large marbles, and of a bright orange colour.

R. D.

MONTHLY CHRONICLE.

IT is reported that after fifty-four years' service in the Royal Gardens, Mr. Ingram will, on account of his age and increasing infirmities, shortly retire from the superintendence of those at Frogmore; and will be succeeded by Mr. Rose. The gardening community owe much to the labours of Mr. Ingram, most especially in the department of raising novelties. It is to him that we are indebted, amongst fruits, for the following excellent varieties:—British Queen Pear; Gipsy King Apple; Frogmore Early Forcing and Early Bigarreau Cherries; and John Powell, Rifleman, Cockscomb, Fairy Queen, Mr. Radclyffe, Prince Arthur, Prince of Wales, and Frogmore Late Pine Strawberries. Among flowers, the beautiful new Rose Miss Ingram, which last year enchanted everybody; and Princess Alice, one of the first of the really good Pink Zonal Pelargoniums, may be specially noted as having been raised by him.

—— One of the kings of the vegetable kingdom—the acknowledged king of Monocotyledons—the great *Dracæna Draco*, or Dragon tree, at Orotava, is no more. A furious gale last autumn levelled to the ground that immense crown which had grown and flourished for sixty centuries. The storm of July 21, 1819, had deprived the tree of a part of its head, but still it remained a striking object of wonder. In February last, still in excellent health, its immense crown was covered with innumerable panicles of scarlet fruits, and the huge trunk, although completely decayed in the interior, sustained vigorously the spreading mass of fleshy branches and sword-like foliage. On the west side, where the ground was sloping, a solid wall had been built under about one-third of the trunk, but on the other side two or three half-rotten staves propped the more projecting branches, and in this neglected state the hurricane found it, and wrought its destruction. An excellent photograph of the tree, as it appeared a few years since, is published in Professor Smyth's *Teneriffe*.

—— Dr. Hooker has pointed out, in a recent communication to the Linnean Society, that the true *Fuchsia coccinea* is a totally different species from that which is so extensively cultivated in all regions of the globe under that name, but which is the *F. magellanica* of Lamarck, a species common in Chili and Fuegia. *F. coccinea* was introduced in 1788; it was published in the *Hortus Kewensis*, and is now only known from living specimens in the Oxford Botanic Garden, and from dried ones taken from the Kew plant, in the Banksian and Smithian Herbaria.

—— The *Agave dasylirioides*, a rare Mexican species, is now in bloom in the Conservatory of the Royal Botanic Society. It has long, pendulous, strap-like, spineless foliage, from amongst which issues the flower spike, about 10½ feet in length, something in the form of a gigantic whip, the thong of which measures some 18 inches in circumference, and is densely packed with green flowers, from which the stamens conspicuously protrude.

—— The fine collection of *Cyclamen persicum*, shown by Mr. J. Wiggins, gardener to W. Beck, Esq., Isleworth, was a principal feature of the Royal Horticultural Society's Meeting on the 21st ult. The plants were only fourteen months old, from seed, but strong, and surmounted with heads of profuse bloom from pure white through intermediate shades to dark rose. They were a pretty sight; and seeing how freely they bloom, and what a long time the flowers will last, they are certainly invaluable for winter decoration, and especially for window gardening.

—— The new Japanese Chrysanthemums deserve special mention, as being likely to become attractive for conservatory decoration. Mr. Salter has many varieties still in bloom, thus carrying on the Chrysanthemum in-door season as far as the end of January, and probably for some time later. A contemporary (*Gard. Chron.*, 1867, 1288), notes four types as observable in this new race, and distinguishes them as the Echinate or Porcupine-flowered; the Radiate-flowered; the Actinioid or Thread-flowered; and the Flat or Ribbon-flowered.

The Echinate group has the florets in the form of stiff, slender quills, which are a little incurved and pointed at the tips. The Radiate has singular spider-like flowers, with a close, button-like disk, and a spreading ray of a single series of long, straight, slender, tubular florets. The Actinioid group, which seems to be the most numerous as well as most novel and ornamental, has the florets rolled longitudinally into a long, subulate, or thread-like form, at length twisting and falling about in a confused manner, but forming loose, elegant tassels. The Ribbon-flowered group consists of varieties with long, broad, flat, but pointed florets, which in many instances, probably in all, form large showy blooms.

—— Owing to the manner of cooking Potatos in France—viz., cut in slices and boiled in oil or lard, called *Pomme de terre frite*, the Kidney form of Potato is preferred to the round. Mr. Knight, of Pontchartrain, states, on the authority of one of the *chefs de cuisine*, that the Milky White variety is exceedingly well adapted for this mode of cooking, leaving out of the question its whiteness, and other extra good qualities. As a profitable second early, he considers it has no equal.

—— Those who intend to make a fine display with Gladioli, should lose no time in preparing the beds, selecting good rich soil, and digging the beds over fully 18 inches deep. If the subsoil is very heavy, there should be mixed with it a good quantity of coarse sand, but no manure, unless very old.—J. W.

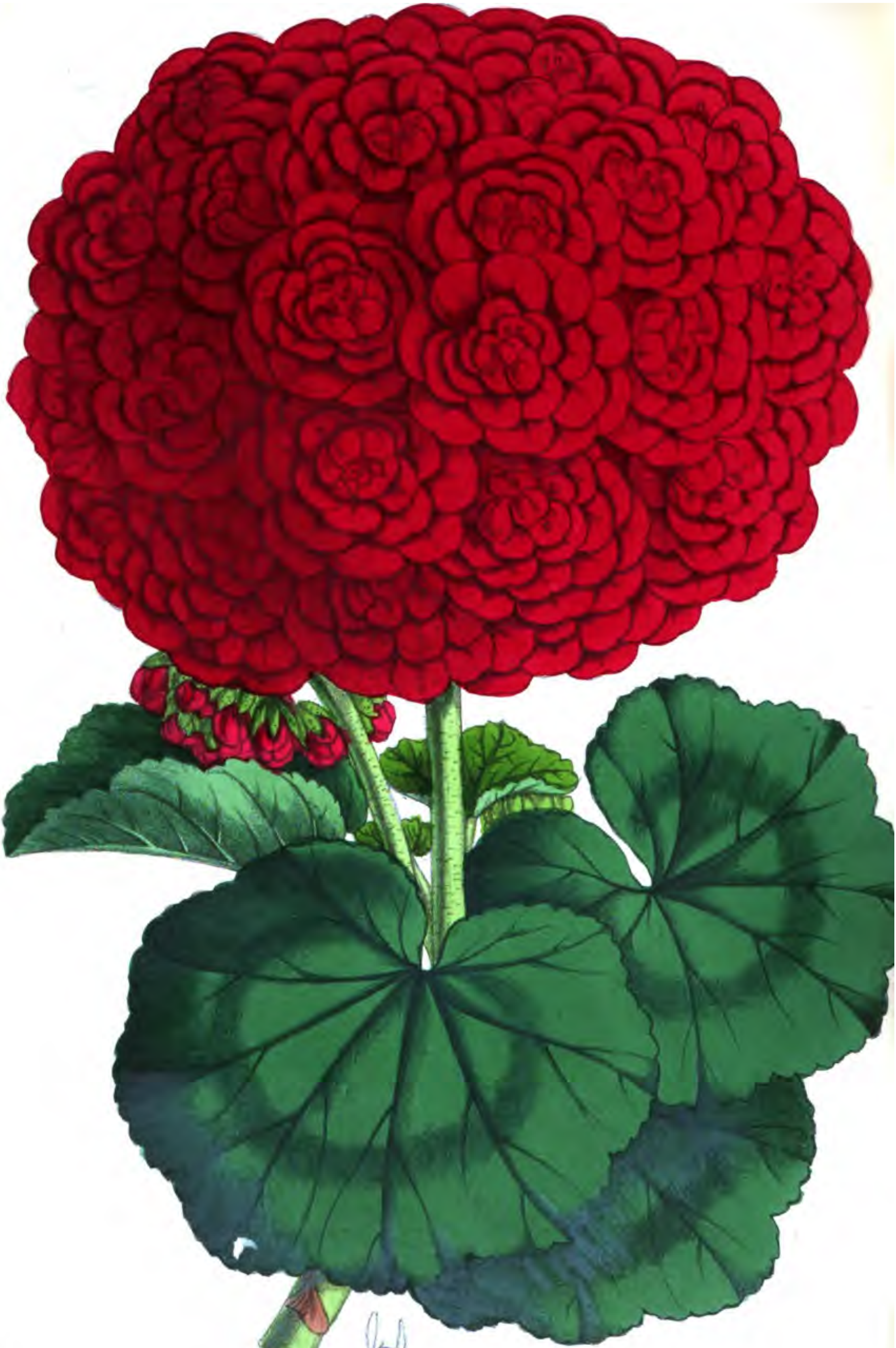
—— The Chrysanthemums at Wollaton Hall, have this season been a most attractive feature, as we learn from a Nottingham contemporary. The plants have been grown to single stems without stopping, and the strength which they had attained was remarkable, and consequently the flowers were unusually fine. The system of growth pursued by Mr. Gadd is most simple. "The cuttings are planted in a gentle bottom heat in February. They are potted-off when rooted, into small pots, and nursed on until the end of May, care being taken to get them as strong as possible. At that time they are transferred to 6-inch pots, in rich compost, and set out upon a hard surface in the open air. The plants are not stopped at all, but each as it progresses is secured to a proper stake. Liquid manure is freely supplied. Later in the season the plants are removed into 11-inch pots, in which they flower. The plants so treated vary in height from 3 feet to nearly 6 feet. Two of them, White and Yellow Queen of England, each with some thirty flowers, many of them measuring 18 inches in circumference, were superb examples of skilful cultivation."

Obituary.

—— Dr. Schulz Bipontinus, of Deidesheim, long known to botanists as a diligent investigator of the Compositæ, died on the 17th of December, in the 63rd year of his age.

—— Mr. Thomas Ansell, who for fifty years carried on successfully the occupation of a nurseryman and florist at Camden Town, died on the 26th December, at his residence, Camden Road, in his 74th year. Mr. Ansell was the fortunate raiser of Dahlia "Unique," which at the time it was brought out created quite a sensation in the floral world.

—— Mr. James H. Dickson, of Newton Villa, Chester, died on the 28th of December, at the age of 72. He was the head of the firm of James Dickson & Sons, Chester, and was one of the foremost men in his profession, well-known, and universally respected.



Pelargonium _ Andrew Henderson.

PELARGONIUM ANDREW HENDERSON.

WITH AN ILLUSTRATION.

SUBMITTED last autumn to the Imperial Horticultural Society of France, and awarded a first-class certificate for its superlative merit, this very beautiful double-flowered variety of Zonal Pelargonium, may well commend itself to our notice. M. Carrière in adverting to it, remarks that, had the raiser flowered it soon enough to have been able to exhibit it at the Great Paris Exhibition, it would have been universally admitted to be greatly superior to all other known varieties in its class; and we think our figure fully justifies such an encomium.

One of its chief features of excellence consists in its style of growth, the habit and texture of foliage being more like those of the majority of the fine single-flowered varieties of English gardens, than of the robust, coarse, vigorous double sorts of the *P. inquinans* section, previously known. The colour of the flowers also differs from that of all preceding varieties, being a clear deep scarlet lake. The truss is of extraordinary size, larger than in any previous double variety, taking a globular outline, and bearing from sixty to eighty expanded blossoms, which are well proportioned, very double, and regularly imbricated like a Ranunculus, thus again differing from the sorts already known, which more nearly resemble the Hollyhock in the arrangement of their petals.

This brief description sufficiently indicates the distinguishing features as well as the great merit of this novel variety, which we may safely recommend for conservatory pot-culture, and also to form select specimens for garden decoration. The variety was raised by M. Lemoine, of Nancy, and a great portion of the stock has been acquired by Messrs. E. G. Henderson & Son, to whom we are indebted for our figure. T. M.

AUTUMN BROCCOLI.

WHEN the principal portion of the supply of our summer vegetables is over, and where a good and constant supply of vegetables is in demand, these are most valuable acquisitions. Foremost in the autumn section, I feel inclined to place the Purple and White Cape varieties, for they possess a hardier constitution than other kinds I have grown. The Purple Cape, indeed, lacks the fine white appearance at table which the white kind possesses, but as regards flavour it lacks nothing, being equally as good, if not superior.

I generally make two sowings of these Cape Broccolis, the first about the second week in April; the second the first week in May; but it is difficult to give accurate dates, so much depending upon the weather and the condition of the soil. The first sowing is generally ready to cut from by the last week in October, and lasts till the middle of November, the second following in close succession. Like all the Brassica tribe, the Cape Broccolis require a good deep rich soil. If very severe weather sets in they can be lifted carefully, partly divested of their leaves, and packed closely together in a cold frame, where they can be protected—thus prolonging the cutting right into mid-winter.

Grange's is also a most useful autumn Broccoli or Cauliflower, but somewhat difficult to procure true.

Wrotham Park, Barnet. JOHN EDLINGTON.

THE CULTURE OF PEAR TREES IN POTS.—II.

IT was, I think, about the year 1845 that the late Dr. Lindley said in a half-triumphant manner—we had had several consecutive fruitful seasons—"Who will now say that England is not a good fruit country?" Alas, for the short-lived triumph! In 1858 I find in my journal the following melancholy entry, "Summer cold and unfavourable; no Pears, no Plums, no Cherries, no Apples; this being the seventh consecutive year of failure in the crop of fruit in the south of England." In 1854 again no fruit; then came 1855 with abundance, followed since then by more or less favourable years. 1866 and 1867 must be placed among the years of scarcity; and owing to the failure of these seasons, my attention was more closely drawn to my Pear trees in pots, which, owing to their having been under glass while in bloom, and thus escaping the spring frosts, bore abundantly.

It is the economical method of stowage of Pear trees in pots in orchard-houses, or in common glass-roofed sheds, that gives value to this species of culture. A span-roofed house with boarded sides and ends, and shutters on hinges, 2 feet wide, opening downwards in each side for ventilation, is a cheap structure. Its sides should be 6 feet high, and its centre from 13 to 15 feet in height. A house of this description may be strongly built, with oak posts to support the side plates, and its roof supported inside by 2-inch gas pipes, at a small cost. As far as I can recollect, from what has been done here, a house of the above height, 100 feet long, and 24 feet wide, ought not to cost more than from £130 to £140, for it must be recollected there is no glass used but for the roof. A house of these dimensions will allow of the stowage of two thousand Pear trees in 11-inch pots, having a border in the centre, two side borders, and two narrow paths to give facility to attend to the trees. In round numbers, the area of the house being 2400 feet, 2000 feet will be taken up with two thousand 11-inch pots, leaving a margin of 400 feet for the paths. It is true that smaller houses may be built; but from experience in the culture of pyramidal Pear trees in pots, such houses should not be of a less height than 13 or 14 feet in the centre, and 6 feet at the sides. Pear trees under glass often bloom early in April, and unless the house they are in is lofty, one of our extra-severe spring frosts may come and destroy the blossoms. The injury, it is true, may be prevented by using pans of charcoal, as in orchard houses; but the end to be attained in Pear culture is security without much care, and this is best attained by having the house large and lofty, so as to contain a large body of heated air after a sunny day in spring, succeeded by a severe frost at night.

Being much struck the past season by the size and beauty of the Pears grown here on trees in pots, it led to a calculation as to the profit that might be derived from it as a commercial speculation. The result of the calculation was extraordinary. Pear trees on Quince stocks, trained as pyramids, five years old, and from 5 to 6 feet in height, of such large Pears as Glou Morçeau, Doyenné du Comice, Beurré Diel, Duchesse d'Angoulême, and many others of the same size, averaged from twelve to eighteen each, the fruit remarkable for their bright colours and clear rinds, without spot or blemish. Fine and well-grown large Pears during the winter months, at a low average, are worth 3*s.* a-dozen. So that from two thousand trees, always safe from storms and frosts while in bloom, we may estimate an annual crop of 2500 dozens of Pears. This may, when the trees attain the age of seven or ten years, be put down at 3500 dozens. When it is considered that a thousand dozens of Pears are worth £150, it will be seen that a house of Pears may be made a source of profit. So much for growing Pears commercially, for which purpose only large and good Pears should be cultivated. Small Pears, however delicious, are useless for market, and should be grown by amateurs only.

The labour required by a large number of Pear trees is not heavy, the routine of culture being as follows, which I give in the form of a calendar:—

1.—The trees should have their surface soil renewed to a depth of 3 inches towards the end of October, and the pots stowed thickly in the house by the last week. They should then have a soaking of water, and be covered with leaves, as is before mentioned.

2.—About the middle of March, unless the weather be very severe, they should be uncovered, and, after their abstinence of four months, have a moderate supply of water. While in bloom, if the weather be mild, the side shutters and doors may be open night and day; if frosty, by day only. Instead of top-dressing or renewing the soil in October, it will be a saving of labour to treat Pear trees in pots after the manner recommended for Apricots —*i.e.*, to allow the surface of the mould in the pots to remain undisturbed till after the trees have set their fruit; and on their removal to their summer quarters, to scrape off a small portion of it, say to the depth of 1 inch, and give the rich surface-dressing recommended. This intermission of the autumnal renewal of the surface soil may go on for two, three, or more years, or till the trees seem to require either top-dressing or repotting.

3.—The first week in June they should all be removed to their summer quarters, and the pots plunged. During the summer every young shoot should be pinched to three leaves, and the fruit thinned. This is of great consequence. At this season manure water will greatly benefit the fruit by increasing its size.

4.—During the winter, if any of the spurs on which the leaves have been pinched, have grown so as to make the tree irregular in shape, they should be shortened with a sharp knife.

Pyramidal Pear trees on Quince stocks in pots make a very healthy but not a vigorous growth, so that they are easily kept in order by summer pinching, and they soon form the most symmetrical and beautiful of fruit trees. Owing to the early blossoming of Pear trees under glass, the season of growth in the fruit is much prolonged, hence its increase in size; but its ripening period is not hastened. This is the case with Pears from the warmer parts of France. They have a longer period to grow in than English Pears in the open air under ordinary circumstances; but, as a rule, they do not ripen earlier, or, as in the case of the Easter Beurre, not so early, for this kind of Pear is often in fine order in France till the end of April.

I ought not to omit stating, that the roof of the Pear-tree house may be devoted to the growth of Grapes, as the Pear trees will be in their summer quarters before the Vines have made much progress, so as to shade them injuriously. The Pear-tree house may thus be a means of double profit. From what I have seen of my Hamburgh Grapes trained under the roof of my house, 100 feet by 24 feet, in which the Pear trees were till June, I am sure they would pay—indeed, I am quite convinced that a house of this size would give a liberal income to a clever man. T. R.

BEDDING LOBELIAS OF 1866.

OF the Bedding Lobelias of 1866 I am able to speak in somewhat confident terms, having had them last summer in a good state to be reported on. For depth of colour nothing beats *Indigo Blue* (E. G. Henderson & Son), colour deep indigo blue, with a conspicuous white centre; apparently a seedling from speciosa, but not growing so diffuse. The colour also stands well; but the season has been so far in favour of this, as there have been but few hot sunny days. *Pumila elegans* (E. G. Henderson and Son), is a very compact-growing dwarf kind, blooming profusely; in colour a bright blue, but having only a very small white centre. The want of a light centre to show up the blue colour gives it a somewhat dull appearance, even when fully in bloom. The habit is excellent, and it also stands well. It was awarded a first-class certificate by the Floral Committee at one of its meetings during the past summer. *Attraction* (Carter & Co.), is an excellent free-blooming variety for bedding purposes; it has the character of Paxtoniana, the centre of the flower being a large blotch of white, which is edged with azure blue. It is of a very desirable habit, and forms a conspicuous feature in the flower garden. None of the new flowers of the present year, in the same way of colour, can at all rival this variety for general usefulness. *Blue King* (Carter & Co.), is almost a self, the flowers being of a deep azure blue colour, with a small white centre; but, like pumila elegans, it wants more white to give life to it. The habit is good, and it blooms freely. Both of the foregoing are valuable for their compactness of growth. *Beauty of Ravensbourne* (Carter & Co.), a valuable addition to the dwarf section, deserves all that has been said in its praise. It blooms in a most profuse manner, the flowers being of a lively lilac hue, with a conspicuous white centre. It is very dwarf-growing, and should be planted thickly together, as the stems appear to branch but little.

The new dwarf white variety, *Miss Murphy*, I can neither grow, nor have I seen it doing well anywhere. It appears to be so weakly in habit as to be incapable of making any perceptible effort in the way of growth. *White Queen* (E. G. Henderson & Son), is of the ordinary growth of marmorata, the tube being pale blue, the lip white. I hear of a dwarf white Lobelia that is shortly to be seen, which, if its character be not exaggerated, promises to be the bedding plant of the season. I also hear that Messrs. Carter & Co. have secured the stock of a new dwarf white kind, that has been proved to possess first-rate properties. As any description of these must at the present moment be taken on trust, a critique on their assumed merits must be reserved till they put in appearance hereafter. R. D.

A FEW WORDS ABOUT PINE-APPLE CULTURE.

IT is pleasing to find that so intelligent an observer and practitioner as Mr. Simpson, of Wortley, finds himself justified by his experience in recommending—in the case of Pine plants, that may happen to miss fruiting at the desired time—a practice which, so far as I know, was first adopted and promulgated by myself. What Mr. Simpson states about fruit appearing to swell-off more fully under the cutting-down system, is quite correct, and the reason need not, I think, be looked for far afield. Pines so treated throw out immense crow-quill-like roots, ready to devour with greediness the elements of nutrition which the fresh feast of fibry soil supplied to them affords.

This is a system to be especially recommended in the case of any who may have to enter on the care of stock that has been drawn up into an unfruitful condition, by improper treatment. The course often pursued in such cases is to throw the plants away as past redemption. Instead of doing so, if they were treated on the cutting-down system, they would not only be certain to fruit, but would also furnish a stock of suckers to form succession plants. This way of procedure saves expense, time, and trouble.

That much has yet to be accomplished in rendering the fruiting of Pines more cheap, by making it much more simple and speedy, I am fully convinced. So far as my own experience is concerned, I have proved that Pines can be made to start into fruit in twelve months from the time they are detached rootless suckers from the parent plants. In the August of 1866 I took a few dozen suckers from the parent plants—before the fruit was ripe, potted them into 7-inch pots, plunged them in a brisk bottom heat, and grew them on freely till the middle, or rather the end of October, by which time they showed a fine lot of roots, and were shifted into their fruiting pots. All the winter they were grown gently on in a temperature of about 65°, with the soil carefully kept genially moist. Early in spring they were pushed on rapidly, and made splendid plants by midsummer. The result was that the whole of them ripened their fruit by the end of January, 1868, just sixteen months after being potted as rootless suckers.

We have a similar batch of plants—Queens, Cayennes, and Charlotte Rothschilds, in the same stage this year, and their appearance presages equal success. This is accomplished with the most ordinary appliances, and I am satisfied can be carried out as a rule.

Archerfield Gardens. D. THOMSON.

SEASONABLE GARDENING HINTS.—MARCH.

UNCERTAIN and variable as the weather is at all seasons, in this country, perhaps there is no month in the year in which it is more changeable than in March. Advantage should therefore be taken of fine weather to perform all out-door operations. There must now be no delays, for to miss a favourable opportunity of doing anything, and to fall into arrears with work at this season, is a serious thing, as the various matters requiring care and attention, will increase rather than diminish in number and importance for some time to come. All cuttings in store pots or boxes, that have been wintered in frames or pits, should be potted-off. Pelargoniums of all kinds will do best in a little heat; and as they are less subject to the attacks of red spider and other insects than Verbenas and most other "bedding" plants, they may be safely put for a time into vineries just started.

Fire heat should, if possible, be avoided now in plant houses. Air should be admitted freely in favourable weather, but cold currents of easterly winds must be guarded against. I would strongly advise letting off the confined air in glass structures in the morning, before the sun affects the temperature; for I am convinced from long observation and experience, that much serious mischief is done in plant and forcing houses through neglect of this precaution. The general potting of the plants may now be proceeded with. The operation itself is simple enough, but is, nevertheless, oftentimes very badly performed, and to this cause may be ascribed half the failures of amateurs and young gardeners. A badly potted plant, however healthy when shifted, never thrives. When the soil is put in loose, or left in holes, the plant languishes, and dies if allowed to remain in that state. It is therefore of the utmost importance to place the soil compactly and properly about the roots. The pots should be clean and well drained, and the soil should be in a proper state—neither too wet nor too dry, but inclining to dryness, in which state it can be pressed between the ball and the inside of the pot. Hardwooded plants should not be over-potted. All newly-potted plants should be kept close for a short time until they begin to grow. They will not require much water until they begin to root into the fresh soil.

Out of doors, bulbs, as they appear above ground, will need protection and attention in frosty unfavourable weather. The pruning of Roses should be finished; also that of trees and shrubs in pleasure grounds. Alterations or work in progress should now be pushed forward with all possible dispatch.

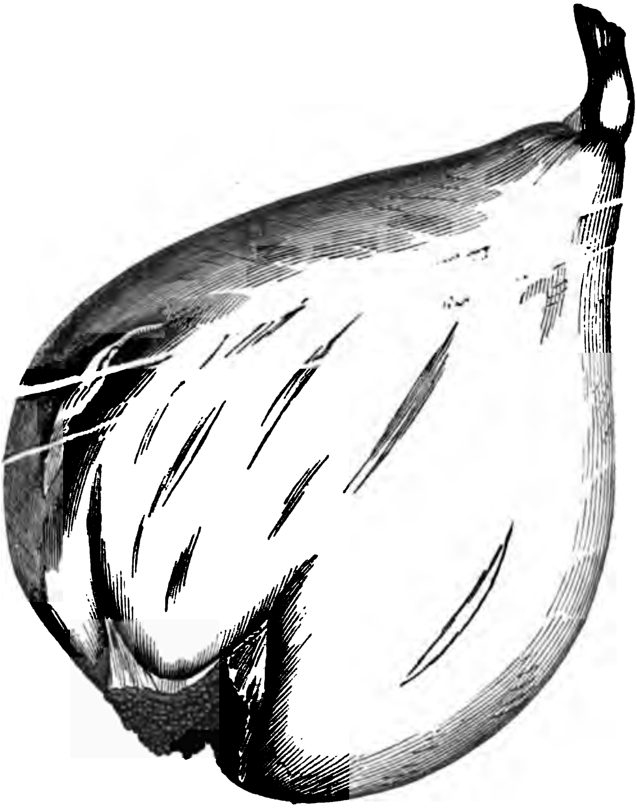
This is a busy time in the kitchen garden. Sowings of the main crops of most vegetables must be made during the month. To get these all done in proper time, with the land in fit condition, is not always an easy matter owing to the uncertainty and changeableness of the weather. There are two points in connection with seed-sowing of paramount importance to the success and vigour of germination, and to the regularity, strength, and luxuriance of the crops; these are, first, the Condition of the soil, and second, the Depth at which the seed is deposited. The presence of air, moisture, and a certain degree of heat is essential to the germination of the seed. The soil is the medium by means of which these are supplied. But then the soil must be in a proper condition for supplying them; if it be very dry, it will contain too much air, and too little moisture to be favourable to germination, while on the other hand, if it be too wet, it will contain too much moisture, and too little air. The depth at which seed is deposited in the soil, has for its chief object the maintenance of a due degree of moisture, but another purpose is to exclude light, and to give the future plant a better hold of the ground. If kept moist and shaded, nearly all kinds of seeds will vegetate on the surface of the ground. We continually see self-sown seeds vegetate with very little or no covering, but the general practice is to cover most kinds of vegetable seeds. Large seeds, such as Peas, Beans, &c., do best when sown at a moderate depth, but great care should be taken not to cover small seeds too deeply, for if sown too deeply at this season, and hot weather sets in, they will perish in the ground. The limits of this paper prevent me from saying all I wish on this subject, but I desire to guard amateurs and young gardeners, however anxious to get in their crops, from committing the great mistake of sowing their seeds when the ground is in an unfit state, and from covering them too deeply.

Apricots, Peaches and Nectarines must be protected as soon as the flowers begin to expand. There is a great variety of materials used for this purpose, but I know none better or cheaper in the end, than strong canvas. When taken care of it lasts a number of years. I have some here that has been used on the average from eight to ten weeks every year for the last twenty years.

Stourton. M. SAUL.

GROSSE VERTE FIG.

THIS very excellent Fig is one of the largest, handsomest, and richest-flavoured varieties in cultivation. Though not new, it was but little known, until last year, when it was fruited at Chiswick, and was awarded a First-class Certificate.



The fruit is large, roundish ovate or obovate, inclining to pyriform, slightly ribbed, with a short thick neck, which is sometimes better defined than in the accompanying figure. The stalk is stout, about half an inch in length. The skin is of a lively green colour, smooth and glossy, marked with numerous small round white dots, changing, when ripe, to a pale greenish yellow, streaked with russetty brown; it is very thin, and cracks lengthways as the fruit ripens. The flesh is of a bright red throughout, thick, syrupy, and most delicious in flavour. The eye is large and open. The fruit sometimes, when fully grown, either from want of sufficient heat, or from too much moisture, splits from the eye into two or three pieces, which curve backwards, thus exposing the bright red interior.

The plant is of stout and robust growth, with large, deep green, moderately lobed leaves. It is a free-bearing variety, well suited for pot culture, and ripening rather late in the season. A. F. B.

GLADIOLUS GOSSIP.

LONG have I wished to say a few words about the Gladiolus, inasmuch as I am under a strong conviction that there is a good deal of false doctrine afloat concerning the culture of this flower. The time for planting being now at hand, I will begin with a few remarks connected with that important operation. Assuming that the bulbs have been safely wintered, and are in good condition, the chief points for consideration are—firstly, the nature and condition of the soil in which they are to be placed; and secondly, the best mode of depositing them therein.

Gladioli will grow in any good garden soil. I have seen them thriving in soils of the most varied character, although I have no doubt diversity of soil would render some difference of treatment desirable, if not necessary. A moderately light, porous soil will give the least trouble, but I know, from experience, that they can be grown, and grown well, even upon a retentive clay. My own soil is of this character, although much ameliorated by suitable manuring and drainage. This latter is indispensable. I believe retention of moisture about the bulbs to be a fruitful cause of that mysterious disease, from whose ravages, at some time or other, few growers escape, and of which I may have something to say on a future occasion. A very high condition of soil is not desirable. What I would insist on, as a *sine quâ non*, is deep and thorough cultivation. To this I believe I owe what success I have obtained in Gladiolus-growing. Let me briefly describe my own practice. As early in the autumn as possible, while the earth yet retains some considerable portion of its accumulated heat, I trench the ground reserved for the purpose, removing the top spit to the depth of 9 inches, and turning up the lower spit fully 1 foot deep, putting a layer of very rotten manure between the two spits. At planting time, about the end of March or beginning of April, I dig a row of trenches, 4 feet apart, from the centre of one to the centre of the other, so as to allow a pathway 3 feet wide between each double row of flowers. From these trenches 4 inches only of earth are thrown out, and the soil at the bottom is well stirred and loosened to the depth of 8 or 9 inches more, but not turned over. The floor of the trench is next covered with 1 inch of road scrapings, thus raising it to within 8 inches of the surface. The ground is now ready to be planted.

The bulbs, having been carefully stripped of their successive layers of cuticle, are firmly pressed down at the outer edge of the trench on either side. I should recommend a distance of 1 foot between each bulb, but want of space compels me to crowd my own more closely together. I allow 8 inches between the larger, and 6 between the smaller bulbs. I am satisfied, however, that they would thrive better if I could afford them more space. Next, I completely cover each bulb separately with Reigate sand, and fill in the earth slightly above the surface level, leaving the surplus in the alleys. The operation is now complete. It will be observed that I plant much less deeply than is generally recommended. I consider 3 inches deep enough for the largest bulbs. Planting at the depth of 6 inches, by no means an uncommon practice, I look upon as an egregious mistake.

May I add a word concerning M. Souchet's new varieties sent out in the autumn of 1866? Out of the dozen there is one, and only one, which deserves to be classed as a first-rate flower. This is *Adolphe Brongniart*, a gem of the first water, vigorous in habit, new in colour, exquisite in shape, with petals of great substance, and the flowers disposed so as to make a handsome spike. It will form a worthy triad with Shakspere and Meyerbeer, the two very best kinds previously in cultivation. I had expected much from *Princess Marie de Cambridge*, but was disappointed, though considering the superlative character sent from France with this variety, I should be sorry to condemn it without further trial. *Thomas Moore*, and *Lady Franklin* are both handsome kinds, but the latter is not better than Madame Furtado, nor so good as Eurydice, both belonging to the same class; *Anaïs* is pretty, but too small; *Sir William Hooker*, very striking, although not perfect in shape; *Sir Joseph Paxton*, and *Felicien David* are both of full average merit. Of the others, if, on the one hand, I have little to say in disparagement, candour compels me, on the other, to be equally chary of commendation.

Ash, Sandwich. J. S.

AS the time for planting the bulbs of this noble flower is near at hand, I will explain the system I found to answer best last season. I tried several plans, but those planted on good rich sandy loam, well dug and broken with the fork about 18 inches deep, the bulbs planted about 3 inches deep, top-dressed with manure afterwards, and supplied with liquid manure once or twice a-week after they were a foot high, produced the finest spikes, and also the finest bulbs, many of the latter being 8¼ inches across, and very healthy. Those planted with manure under them did badly. I also tried the system of potting a few previous, with a view to getting them in bloom earlier, but found little or no benefit in that.

These are generally considered to be only half-hardy plants, but the bulbs will bear a greater amount of frost when in the soil, than many parties imagine. I planted some in February last season, and have at this time above a hundred bulbs planted early in February. If severe frost comes on, I cover with litter. I am well aware that most growers recommend and use manure freely, but I record facts as I have found them.

Those who have not got their full complement of bulbs, and do not make price any objection in their selection, may safely add to their stock from the following twelve improved varieties:—Dr. Lindley, Eurydice, Fulton, Lord Byron, Madame Furtado (*Souchet*), Maréchal Vaillant, Meyerbeer, Milton, Monsieur A. Brongniart, Shakespere, Sir Wm. Hooker, Sir Joseph Paxton.

Winton. J. WALKER.

AËRIAL ROOTS UPON VINES.

IN reference to the question of the influence which the general culture of the Vine has upon the production of stem roots, I would urge upon the consideration of those who are interested in the subject, that one of the principal causes of their production, is the great inequality which often exists between the temperature of the medium in which the roots proper—by which the plants are supposed to derive the chief part of the food which they require to build up the structure of the branches and fruit—are placed, and the temperature of the atmosphere to which their branches are exposed. All our experience tends to prove that the best specimens of Grape cultivation are produced at that season of the year when those temperatures most nearly approximate; and therefore I look upon that as a standing-point from which we may commence our investigations as to the conditions which influence that perfection, and the reasons why it not unfrequently happens that practice is successful under adverse circumstances, and also why, when those circumstances are less adverse, the expected success does not always follow.

Many persons find no difficulty in bringing their Grapes in fine condition up to the stoning point, but somehow or other they do not finish off well. A host of minor difficulties spring up, such as those puzzling stem roots, weak elongated growth, long footstalks to the berries, loose bunches, and shanking, all of which evils are clearly traceable to a want of balance between the temperature of the border, and that of the interior of the vinery on the one hand, and to the condition of such borders and that of the interior atmosphere, on the other—for it is quite possible for the condition of either separately, or both united, to be either too wet or too dry, and, therefore, here also a due balance must be maintained. The best of borders may be nullified by bad management inside, and the best of management may be baffled by bad borders, so that it would appear that it is to the proper construction of the borders that we must look, in the first place, for a correction of the evil. I do not intend in this place to enlarge upon the component parts and proportions of the constituents of the border, but shall content myself with stating a few of the leading principles which should influence the merely practical part of the question.

The materials of which a border for the culture of Vines should be composed, ought always to be selected with especial reference to the amount of water which they are calculated to hold in position, when subjected to its action. All soils are not alike in their capacity for retaining water; some will hold a much greater quantity than others, and as a rule those which retain but a moderate proportion will be the most suitable. The former, indeed, being often the strongest, may be possessed of more intrinsic fertility, whilst the chief merit of the other is that it is of an open and porous nature. There is therefore no reason why the stronger soil should not be used if desired; because, by the judicious admixture of other substances which are calculated to open up the texture, the necessary porosity may be secured in the whole bulk, so that when pressed down with tolerable firmness it will not become a soddened mass, but, on the contrary, will be sufficiently elastic to spring partly back when the pressure is removed. With such a compost, and a thoroughly efficient drainage, there need be no fear of wet, cold, and water-logged borders.

Borders formed with a view to openness of texture, and freedom from stagnant moisture, will, under any circumstances of external temperature whatever, be always found warmer than such as run close together, and hold much water; and this is a great point gained. Then, again, the roots will be able to penetrate through the mass and obtain nourishment freely, without being pulled up short, and their progress barred by cold water. Moreover, when rich top-dressings come to be applied to these well-prepared borders—which, we may observe in passing, is an excellent thing to be done, when there is an extra demand for food—they are in the proper condition to take immediate advantage of them, because the roots are in full action and ready for anything good; but, on the contrary, in ill-drained and soapy borders, such applications often only make bad worse.

Now, the production of roots on the stems of forced Vines is a matter of very secondary importance, taken *per se*, but it becomes important as an indication of a condition of things which is likely to act far more inimically in other ways; and in seeking out a remedy for the one, we shall most likely find that the means are such as will appeal to our reason as those most likely to act beneficially in the case of other unhealthy indications.

In reference to Mr. Cramb's remarks (p. 28), I see no reason to alter my opinion. I do not for a moment deny that a hot, moist, and quiet atmosphere is a condition favourable to the production of aërial roots, but it is not a predisposing cause; and we ought to look farther than that for other causes likely to influence their production. I have fruited by the score pot Vines placed on a stage over the pipes, in a house subjected continually, up to the time of the fruit colouring, to a hot and moist atmosphere, yet these never produced aërial roots, but in the same house were stems trained up the rafters from an outside border and these did very often produce aërial roots. Hence it is very obvious to me, why Vines plunged as described, should produce aërial roots; but so many things bear upon the subject, that I must not now occupy more valuable space.

Redleaf. JOHN COX.

I BELIEVE Mr. Cox is right in his opinion that inequality of temperature between root and branch is one of the primary causes of this evil. His remarks are convincing, though they suggest the necessity of examining our whole system of Vine culture to see if there are not other causes, arising from the want of a closer observation as the Vine passes through its different stages of growth. It is well known that the Vine, though placed in the most favourable positions as regards root and branch, does not always root and grow with the same vigour, and is sometimes unable to carry a full crop, although it is too much the custom to take one nevertheless; whereas if assistance were afforded it by reducing its crop, say one-third or more, or if it were otherwise encouraged, its weakness and air-rooting propensities would probably be but of temporary duration. I have practised this plan with success, and air roots have only appeared one year.

I also think that closer observation is needed when starting a Vine into growth, in order to secure that its roots shall be the principal agents in causing the buds to break. This can be realised by applying to the roots the best heating materials at command, about three weeks before the house is finally closed for forcing; and then, by avoiding a too moist atmosphere and too high a temperature for the first fortnight, a more uniform action between root and branch would be ensured, and the tendency to produce air roots would be checked. Take a pot Vine as an illustration: plunge the pot in a mild bottom heat, until root action commences, and then set the top to work also. Such a Vine will bear nearly any amount of heat and moisture without producing air roots. I am of opinion that strong north and east winds have a great retarding influence on the root action of Vines, especially those in outside borders. This, of course, cannot be avoided altogether; therefore I should advise reducing the inner temperature in proportion. This, I am of opinion, would also keep the demand and supply upon more equal terms, and check the progress of the evil complained of.

There are many other things which tend to weaken the constitution of the Vine, and produce air roots, too numerous to mention in this short paper, but which it is within our power to prevent, if due judgment and forethought are used during the growth of the Vine.

Lillesden, Hawkhurst. THOMAS RECORD.

PRIZE GOOSEBERRIES.

ANTICIPATING that the following list of ten in each class of the heaviest berries of last season, may be of some little interest to fruit-growers I have much pleasure in sending it, and will hereafter send descriptive particulars of them, if acceptable. Large fruit of all kinds is now generally inquired after, but quality does not always accompany size in the berries. Companion, though not in the list, is one of the first class as to quality, and the best for preserves I have yet tried.

Red.	Dwts.	grs.	*Green.*	Dwts.	grs.
Rover (*new*)	30	18	Shiner	25	5
Beauty	26	18	Telegraph	24	19
London	26	12	Stockwell	24	0
Speedwell	25	21	Bravo	23	6
Bollen Hall	25	8	Thumper	23	5
Clayton	24	1	Plunder	23	2
Dan's Mistake	23	6	Green London	23	0
Lord Liverpool	23	1	Turnout	22	7
Foreman	22	3	Rough Green	22	4
Lion's Provider	22	18	Hospool	22	0

Yellow.	Dwts.	grs.	*White.*	Dwts.	grs.
Leveller	28	2	Antagonist	26	5
High Sheriff	25	1	Hero of the Nile	26	3
Peru	24	10	Postman	25	18
Catharine	24	9	Alma	25	5
Leader	24	4	Elizabeth	25	0
Drill	23	23	Careless	23	9
Mount Pleasant	23	16	Lady Leicester	23	0
Ringer	23	12	Gibraltar	22	12
Lord Rancliffe	23	2	Peto	22	12
Hue and Cry	23	0	Jenny Lind	22	11

Winton. J. WALKER.

HOW TO EXTEND AND IMPROVE OUR VARIETY OF FRUIT.

ON the 25th of January I put in about a dozen buds of Dr. Hogg Peach (a new variety of Mr. Rivers') into the old wood of an established tree in the early Peach house, and all the buds are at this time (7th February), growing. The tree when budded was just coming into leaf. At the same time I put buds of Albert Victor Nectarine into another tree, but this tree not being so forward, the buds have not yet moved, though they seem all right. On the 4th of February I put into other trees buds of Rivers' Beatrice, Early Rivers', and Comet, and on late trees in the same house I purpose budding Lord Palmerston and Princess of Wales. I hope in this way to extend the season of ripe Peaches at least a month from the early house, as well as gaining a greater variety of fruit

Some of your readers may not be aware of the great facility with which the naked stems of old Peach trees may be filled with buds at the time the sap is flowing, and how easy it is in this way to secure better trees and a greater variety of fruit. The trees now operated on are planted out, and trained under the roof of the house. I may add that some years ago, trees on an open wall, operated on in this way, gave very satisfactory results.

Studley Royal. JOHN CLARK.

ON SARRACENIAS, AND THEIR CULTURE.

ALTHOUGH not having the gorgeous colours which many of the more fashionable plants usually met with in the stove or greenhouse possess, nevertheless there are few plants in cultivation more worthy of place than the Sarracenias, for unquestionably they are amongst the most curious of Nature's vegetable productions; and when well grown possess a beauty of their own, which has the recommendation of lasting throughout the year.

Having been tolerably successful in growing them, I propose to give a few hints on their general cultivation. As they are found indigenous in Florida and the adjacent regions of Temperate America, it is at once obvious that they do not require, nor will they long exist in, that excessive heat, especially in the winter, to which we often see them subjected. Through the months of September, October, November, December, and January, I find that a temperature by night of 45° to 50°, and by day 50° to 55°, to suit them best. About the middle of February they show signs of growth; then I pot them, and increase the temperature about 5° day and night. By the middle of April I give them 5° more. Through May, June, and July I give them 65° at night, with a rise of 10° by day: of course in very hot weather the temperature will run higher, but they get plenty of air day and night. They are kept near the glass, and a thin shade is used in sunny weather.

The mode of propagation is by division of the crowns with a sharp knife. The compost I pot in is good fibrous peat, broken about the size of pigeons' eggs, to which are added one-sixth of chopped sphagnum, and sufficient silver sand and crocks, broken to the size of horse beans, to keep the soil quite open. On no account are the plants allowed to remain more than twelve months in the same soil, however fresh it may appear;

for if left a second season, the soil will be certain to become sour, and then the roots rot as fast as they are made. When repotting, shake them clean out. I do not approve of pans placed under the pots; and never syringe overhead, as it has a tendency to induce a softer growth in the pitchers, which causes them to die off much sooner. During the growing season I water every day, in winter twice a-week.

I should strongly advise those who may be commencing their cultivation to procure thoroughly established plants, as there is great uncertainty in imported ones: sometimes almost every plant in an importation will grow, but much oftener the plants, after potting, commence growing, and go on the first season without making any roots, the leaves they produce being simply a last effort of the plant working on the little vitality it has left. Such plants are almost certain to go off in the winter; hence their scarcity. On one occasion I received a dozen plants, which all appeared to be going on right the first season, but only one of the number lived through the winter; they had made no roots. The sorts I cultivate are these :—

S. rubra, which is extremely rare; the flowers scented, equal to Russian Violets.
S. purpurea, and a variety much finer than usual in its veinings.
S. flava, three varieties, quite distinct from each other.
S. variolaris.
S. Drummondii rubra and *Drummondii alba*, the latter variety being very scarce.

Summerfield, Bowden. T. BAINES.

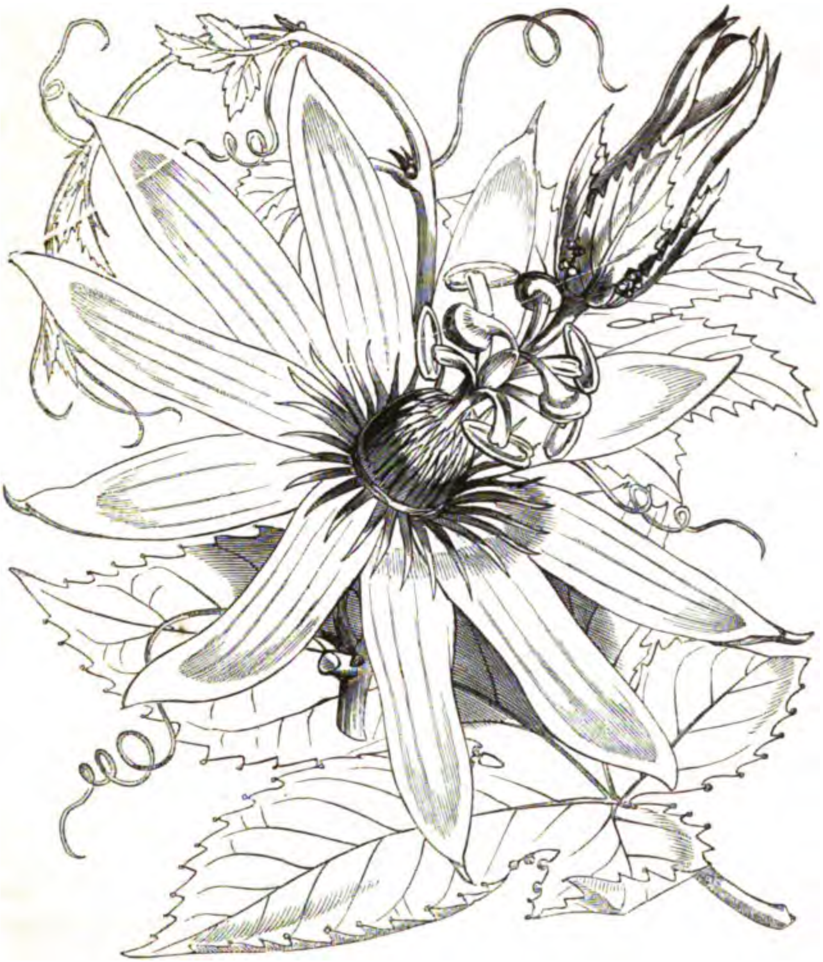
TACSONIA BUCHANANI.

THIS ornamental and very distinct species of *Tacsonia* has been recently discovered in the forests of Panama, where it is found climbing the trees, and decorating them with its brilliantly coloured flowers. The stems and branches are terete, and furnished with five-lobed leaves, the segments of which are deeply and unequally toothed, and the sinuses furnished with several (one to four) glands. The flowers measure about 4½ inches across, and are of a bright vermilion red; they have a short tube and peduncle, a ray of about ten corolline segments, and a triple corona, of which the first is very short, the second is longer and preading, adherent at the base, and the third is connivent and entirely free. The leaflets of the involucre are ovate-lanceolate, and coarsely gland-toothed at the margin.

The stock of this brilliant plant has been acquired by M. A. Verschaffelt from Mr. Buchanan, of New York, who states that it flowers very abundantly twice a-year—namely, in May and in September.

As conservatory or hothouse climbers of large growth, the half-dozen species of *Tacsonia* now found in our gardens occupy a high position. Three of them have rosy pink blossoms; and of these *T. pinnatistipula* and *T. mollissima* have the flowers long-tubed, while *T. sanguinea* has the tube short.

The other three have the flowers of a rich crimson or bright red, *T. Van Volxemii* having the tube elongated, while in *T. manicata* and *T. Buchanani*



that part of the flower is but slightly developed. Our present subject will require to be cultivated in the stove.

T. M.

BEDDING PELARGONIUMS.

THE past summer did not prove a favourable one for the experimental growth of new varieties of Pelargoniums with the view to ascertain their qualities as bedding plants. The newer sorts are frequently sent out as small weakly plants, and such as these when received somewhat late in the season, do not become sufficiently established to show their true characters, if the season is at all adverse. Hence the list of approved sorts tested at Chiswick in 1867, is much more limited than usual, not, probably, so much because the new sorts are really inferior to those of former years, as that they have not been enabled to develope their real merits. We subjoin a list of those which the Floral Committee selected from a very large collection, to receive first-class certificates :—

Madame Martha Vincent, a good free-blooming white, the petals being slightly tinted blush, and the flowers in good trusses.

Purity, free, and bearing good trusses; the flowers pure white. This and the foregoing were the two best of the many white-flowered sorts in the Chiswick collection, the first having slightly the advantage in freeness and size of truss, and the latter in pureness of colour.

Madame Werle, free-blooming, and of fine shape, white, with a delicately-tinted rosy pink eye; the leaf zonate.

Crystal Palace Gem, a large and very showy red flower with small white eye, something in the way of Roi d'Italie, and with dark zoned leaves.

Rebecca, a semi-Nosegay, with zoned leaves, and fine trusses of large rosy red flowers, having the glowing upper petals, so prevalent amongst the varieties of Beaton's race.

Violet Hill Nosegay, which had formerly been voted a second-class certificate, was adjudged worthy a first; it is remarkably dwarf and compact, with a full head of salmon-red flowers, and has lobed leaves; if a continuous bloomer, it will make a pretty edging variety,

Fairy Queen, a free and useful sort, with bright rosy crimson flowers, and lobed leaves.

Dr. Hogg, very showy, a semi-Nosegay, with large broad petals of a rosy crimson hue, the lower petals, especially in some stages, being more strongly suffused with rose.

Lady Constance Grosvenor, a very effective flower, and probably the best of the present season; the leaves are of a peculiarly lively green, and elegantly marked with a dark zone, and the flowers (of the Nosegay class) are of a very bright scarlet, and produced in large trusses; it is a decided beat upon Cybister.

Sambo, of dwarf compact habit, with faintly zoned leaves; the flowers are rather small, but of a very rich crimson scarlet.

Warrior, a strong-growing sort, with plain green leaves, and large trusses of finely shaped bright scarlet flowers.

Gloire de Nancy, a strong-growing sort, with large plain green leaves, and rosy-tinted flowers; the best of the double-flowered varieties yet submitted to trial.

Princess Alexandra, a silver variegated sort, of compact growth, with large flat leaves, broadly edged with pure white.

Castlemilk, a white-edged variety, of rather erect free growth, clear and effective in colour, but the leaves are somewhat inclined to cup.

Snowdrop, the counterpart of Princess Alexandra as to compactness and flatness of leaf, but with the broad margin of a creamy white tint.

Second-class certificates were given to the following varieties :—

Albion's Cliffs, a silver-edged variety, much in the way of Castlemilk, but more vigorous in growth, and somewhat less white in appearance; a good useful sort, nevertheless.

Vulcan, a free-growing sort, with green lobed leaves, and semi-Nosegay flowers, of a clear scarlet.

Oberon, with yellowish green leaves, marked by a dull zone, and large scarlet semi-Nosegay flowers; it is bright in colour, but thin.

We may add, that amongst the most freely bloomed and effective Pelargoniums we met with last season, were some of Mr. W. Paul's varieties, already sent out, as growing in his nursery at Waltham Cross. This result seemed to be attributable to the constitutional power of Beaton's race of Bedding Pelargoniums, which have many of them an inherent vigour, enabling them to withstand stormy and uncongenial weather better than some other kinds are able to do. Without referring to them at length, we may briefly mention that amongst those to which these remarks especially refer, were Crusader, Clio, Dr. Hogg, Blue Bell, Autocrat, and Village Maid, all, we believe, varieties sent out last spring. Dr. Hogg is described above; Autocrat is a bright orange; Crusader, a crimson scarlet; Clio, a rosy purple with scarlet upper petals; Village Maid, a deep rose pink with clear white blotch; and Blue Bell, a shade of pink with a bluish tinge. These may all be recommended with confidence. M.

VINE STOCKS AND VINE-GRAFTING.

I AM pleased to see that Mr. Standish has drawn attention (p. 15), to the grafting of the Vine, with the idea of improving and strengthening the fine-flavoured, but weak-growing sorts. Grafting is an easy operation, but I fear it cannot be performed as Mr. Standish points out, for the object of fruiting a barren Vine the same season. I have ripened a bunch from a graft inarched the same season, the end of which was placed in a small bottle of water; the bunch and berries were small, but well coloured, but it served more as a curiosity than for usefulness.

I have growing here a West's St. Peter's, grafted on a Purple Constantia, and I find the fruit greatly improved in flavour, while the berry is much larger, and quite a fortnight earlier. The two adjoining Vines are West's St. Peter's, and very healthy, one on its own roots, the other grafted on the Black Prince; in these two cases there is no perceptible difference. In another house I have a Black Hamburgh inarched on the Purple Constantia, using the two stocks for the one Vine, and in this case the Hamburgh is quite a fortnight earlier, and the fruit much richer in flavour. The Vines on the Constantia appear to have the lead in vigour of all the other Vines. In the same house is a Muscat of Alexandria inarched on the Royal Muscadine, using the two stocks for the Muscat Vine. On this Vine the fruit sets almost to a berry, and is very vigorous. These Vines are freest, which is a consideration greatly in its favour.

The Muscat Hamburgh I have in another house, grafted on a Black Frontignan. This Vine is not so vigorous as one on its own roots in another house; the berries are larger, and more oblong on the grafted Vine; they set as freely as the Hamburgh, but are generally deficient in colour. Some years since I grafted the Golden Hamburgh on a very strong Vine of the Barbarossa [Gros Guillaume]. The graft became a very vigorous Vine, but for three years the bunches were little better than tendrils, and it was in consequence replaced by a more useful variety. As a late Grape the Barbarossa is a great favourite here, being always superior in flavour to the Alicante or Lady Downes', and it generally carries good crops.

Great improvement can, no doubt, be made, both in flavour and fruitfulness by grafting; but the great difficulty appears to be in selecting stocks to suit the different varieties. I am inclined to favour the Constantia for a stock; it is a good grower, and makes fibres very freely. It answers here for two varieties admirably, and if I had more stocks of the Royal Muscadine I should certainly put Muscats on them.

Thorpe Perrow. WILLIAM CULVERWELL.

PROTECTION FOR WALL TREES.

ALL who cultivate wall fruits will be now thinking about something in the way of protection. During my practice, of more than twenty years, I have adopted various modes, from the fir branches of our forefathers, down to canvas curtains; and taking all things into consideration, I give a most decided preference to the latter, both for efficiency and economy. When they are nicely fixed, the labour of covering and uncovering is trifling; an active lad will soon run round a large garden.

The following is a very simple and convenient way of fixing. Make the curtains in lengths of about 8 yards, with rings top and bottom, to run on strained wires, which are cut in separate lengths, the same as the curtains, with an eye turned at each end. Those at the top of the wall are strained to hooks "such as are used for a common curtain rod;" there should be a hook placed in the centre also. The bottom wire must be fixed to short posts let into the border about 2 feet 6 inches from the wall, with hooks so placed that the eyes turned at the end of each wire pull against each other. The curtain is drawn from each end to the middle, and made secure by tying.

Oakley Park, Suffolk. W. ROBINS.

THE CULTIVATION OF THE CARNATION AND PICOTEE.

LET me follow up the remarks already made by describing the treatment proper for these charming flowers. The first thing to be thought about is the soil most suitable for the healthy growth of the plants. Now, I find that good sound yellow loam, such as will grow wheat well, is mostly suitable for growing and blooming these flowers successfully, if it is properly prepared before using. First, get from the headland of a field which has not been over-long in fallow, the quantity of loam required, and then procure some cow's dung—which is my favourite manure for most kinds of florists' flowers—three-fourths loam to one of cow's dung. I should advise that this mixture should be made up during the summer months, to be ready for use at the following spring planting. The dung taken from the field where the cows are feeding from grasses alone, is preferable to that obtained from the shed, where dried food is given them. But whether from the field or shed, I recommend its being mixed with water, and used in the liquid form—first a layer of the mould, turned on to a heap, then a portion of the liquid thrown over the mould, and then another portion of the mould, and so on till the heap is made up. If the loam should be of rather a heavy close nature, it may be as well, before throwing it up with the dung, to mix with it a small quantity of river or road sand, and at the same time a small quantity of quicklime would be of service. After it has laid in a heap for about six weeks or two months, then chop it down, giving it a regular turn-over, and during this process keep a sharp eye upon it all through for the *wireworm*, which is the worst enemy the Carnation has to contend with. The chopping-down and turning of the soil will require to be repeated several times before it is fit to be used for the summer's growth in their blooming pots. The soil for the layers, when taken off in the autumn, will not require any manure at all, but the same sort of loam will suit them quite well enough while they are in their small pots during the winter months. In the spring, about the middle of April, they require to be taken out of the small pots with the whole ball of earth about them, and placed in the larger pots, the newly prepared soil being nicely filled-in round about them. For about a month or so, the pots ought to be placed on the south side of a wall or hedge running east and west, and about the end of that time the sticks may be thrust down the centre of the pots, and the pots then moved to an open airy space of the garden, where they can enjoy all changes of weather up to near the time of blooming.

In a future paper I will give my own practice for blooming, layering, &c. I shall now give the names of those which are considered the leading varieties, for which list I am indebted to Mr. T. Mellor, of Ashton-under-Lyne, who is, I believe, in possession of one of the largest and best collections of these beautiful flowers in Lancashire or Yorkshire—at one time the two chief counties in England for Carnations and all kinds of florist's flowers, excepting Tulips—which latter, however, seem to be gaining ground, and leaving other flowers behind them. However, as we now hear of inquiries in the market, I hope we shall see something like a revival of old times, when was sung:—

"Ye gardeners and florists all,
Attend unto my story:
What I relate to you is all
My tale of fame and glory.

"In spring and autumn, all the same,
I spend an hour of leisure;
In winter, and in summer too,
My garden is my pleasure.

"Grow flowers, grow: grow flowers, grow.
While gardening is a pleasure,
I'll attend the flower show."

SELECT LIST OF CARNATIONS AND PICOTEES.

Scarlet Bizarres: Admiral Curzon (Easom), Sir J. Paxton (Ely), Duke of York (Strong), Lord Derby (Heap), Sir R Peel (Marchant), Music (Brierly).

Crimson Bizarres: Warrior (Slater), Jenny Lind (Puxley), Lord Milton (Ely), Lord Raglan (Bower), Captain Stort (Jackson), King of Carnations (Puxley).

Pink and Purple Bizarres: Falconbridge (May), Sarah Payne (Ward), Captivator, Fanny (Dodwell).

Scarlet Flakes: Sportsman (Hedderaly), John Bayley (Dodwell), William Dobbins (Simmonite), Henry Steward (Holland), Ivanhoe (Chadwick), Sir H. Havelock (Puxley).

Rose Flakes: John Keate (Whitehead), Lovely Anne (Ely), Mr. Martin (Elkington), Queen Boadicea (Empsall), William Green (Simmonite), Rose of Castille (Headly).

Purple Flakes: Juno (Baildon), Dr. Foster (Foster), Earl of Stamford (Addis), Premier (Milwood), Lady Peel (Haslam), Beauty of Woodhouse (Mansley).

Purple Picotees, heavy edged: Mr. Summers (Simmonite), Mrs. Bailey (Dodwell), Lord Nelson (Norman), Mrs. May (Turner), Duke of Devonshire (Bailey), Racer (Jackson).

Red Picotees, heavy edged: John Smith (Bower), Countess of Wilton (Holland), Mrs. Dodwell (Turner); Dr. Epps (Smith), Mrs. Hoyle (Hoyle), Mrs. Norman (Norman).

Rose Picotees, heavy edged: Flower of the Day (Norman), Rose Queen (Wood), Elise (Kirtland), Rev. H. Matthews (Kirtland), Princess Alice (Kirtland), Aurera (Smith).

Purple Picotees, light edged; Mary Simmonite (Simmonite), Ganymede (Simmonite), Mrs. Hanaford (Simmonite), Bridesmaid (Simmonite), Finis (May), Lady Eloho (Turner).

Red Picotees, light edged: William Summers (Simmonite), Ada Mary (Smith), Lauretta (Smith), Miss Holbeck (Kirtland), Rosetta (Turner), Charles Turner (Turner).

Rose Picotees, light edged: Northern Star (Wood), Miss Wood (Wood), Bertha (Marris), Jemima (Kirtland), Miss Sewell (Kirtland), Maid of Clifton (Taylor).

Huddersfield. J. HEPWORTH.

NOVELTIES, &c., AT FLOWER SHOWS.

ANOTHER fine *Violet* was produced by Mr. Graham, of Cranford, at the meeting of the Floral Committee on the 18th of February. It greatly resembles *The Czar*, but the flowers are said to be larger, of better form, and more fragrant; it is named *Victory*. The plant also illustrated in a remarkable degree what could be done with the Violet under superior cultivation.

Two new *Camellias*—*Miss Baskerville Gregg*, from Mr. Allen, Withington Hall Gardens, and *Florentine Beauty*, from Messrs. E. G. Henderson & Son, must be seen in much better condition ere they can rank as standard kinds. The first named is a white ground flower, slightly flaked with pale rose; the latter a pale rosy-salmon-coloured variety, something in the way of Valteverado. The former lacks build and symmetry; the other requires increased size and augmented substance. A double-flowered *Azalea*, named *François Devos*, came from Messrs. F. & A. Smith, Dulwich; it was a small plant, loaded with very good double flowers, of a bright red hue, but the specimen scarcely furnished a reliable criterion by which to judge of its merits. It will probably be seen again, and is not unlikely, as in the case of the double variety named William Bull, to be useful for forcing.

A somewhat novel form of the *Primula sinensis*, called *plicata*, was also shown by Messrs. F. & A. Smith. The foliage is rather undersized, but it has a tough and wiry appearance, suggestive of a greater hardihood of constitution than usually falls to the lot of this popular spring-flowering plant. The flowers are plaited, of a pale lilac rose hue, paler at the edges, and having a showy yellow centre. The calyx is most unusually large, and continues to grow on with the flower, and would appear to serve to retain the flower longer on the stalk. Its value will probably lie more in its capacity to originate, than in what it now is. It is said to have been the result of a cross between the Chinese Primula and the Polyanthus, the latter having of course been used as the pollen parent. R. D.

ON KEEPING LATE GRAPES TILL APRIL.

IN answer to inquiries about keeping Grapes good for a long time, the great secret—indeed the greatest secret of all—is that they must be well ripened by the end of September, and must be of good colour, and well furnished with bloom. Whatever our friends north of the Tweed may say regarding red Grapes being as good as black ones, the red ones will not keep long, while those having good colour and good bloom will keep well until April. The other points to be attended to are, to keep a low temperature and a dry atmosphere, with a little heat in the pipes the last three months of the year; to secure plenty of ventilation; and to give a sharp look-out for any tainted berries. They should not be looked over less frequently than three times a-week during November, December, and January; after that they are much less trouble, as the days get longer and drier.

The varieties I have at present are, Alicante, Lady Downes' Seedling, and Royal Vineyard, which last seems to be as good a keeper as the two first named. With this I send a piece of a bunch of each [fresh and good every way: ED.], and I feel confident that those left on the Vine will be as good the first week in April as they are now (Feb. 17th). By that time our first house of Hamburghs will be ripe.

Knowsley. JAMES FREEMAN.

MONTHLY CHRONICLE.

THE Council of the Royal Horticultural Society, at the Anniversary Meeting, held on February 14th, reported that the subscriptions received from Fellows during the past year amount to £8027, as compared with £8176 in 1866, £7975 in 1865, and £7840 in 1864; and that twenty-five old Fellows, who had resigned, have again become members. That the exhibition at Bury St. Edmunds more than answered the most sanguine expectations of its promoters, and that a still more decided success is anticipated from the show which it is proposed to hold this year at Leicester. That there are now fifty-two floricultural and horticultural societies in union, of which twenty-four joined during the past year. That notwithstanding all the drawbacks arising from the serious monetary depression of the last two years, the revenue for 1867 has considerably exceeded the outlay necessary to carry on the Society's work. That the labours at Chiswick have met with much success. M. Bause, the foreman of the floral department, has succeeded in the production of an entirely new race of Golden-leaved Caladiums; and in the pomological department many interesting trials of varieties of fruits and vegetables have been carried out, including one of a valuable collection of Figs. That the success of the Chiswick students is particularly gratifying, and that further aids to their studies will be afforded. That the expenditure on last year's exhibitions was £1727 18*s*. 3*d*., the receipts only £1402 7*s*. 6*d*.; so that the Society must proceed with caution in again attempting any increase under this head. That the Committee of the International Horticultural Exhibition has generously applied the whole of its remaining] surplus funds to the acquisition of a library, to be held in trust for the use of the Society and others; and that the claim put forward by the Council for the recognition of Mr. R. Thompson's important services to horticulture, has resulted in a subscription which at present amounts to £360. Viscount Sandon, Mr. Wentworth W. Buller, and the Rev. Joshua Dix retire from the Council, and are succeeded by Mr. John Clutton, Mr. J. Russell Reeves, F.R.S., and Mr. William Marshall, of Enfield.

—— The Société Royale d'Agriculture et de Botanique de Gand holds its eighth International show from March 29th to April 5th. The schedule of prizes extends to 241 classes. The Royal Flora Society of Brussels intends to organise each year, a Special International Competition for some particular group of plants. This year a special exhibition of Orchids will be held at Brussels from the 26th to the 28th of April inclusive. Amateurs and professional cultivators of all nations are earnestly invited to take part in the competition. While this special display of Orchids is going on, a General Exhibition will also be held.

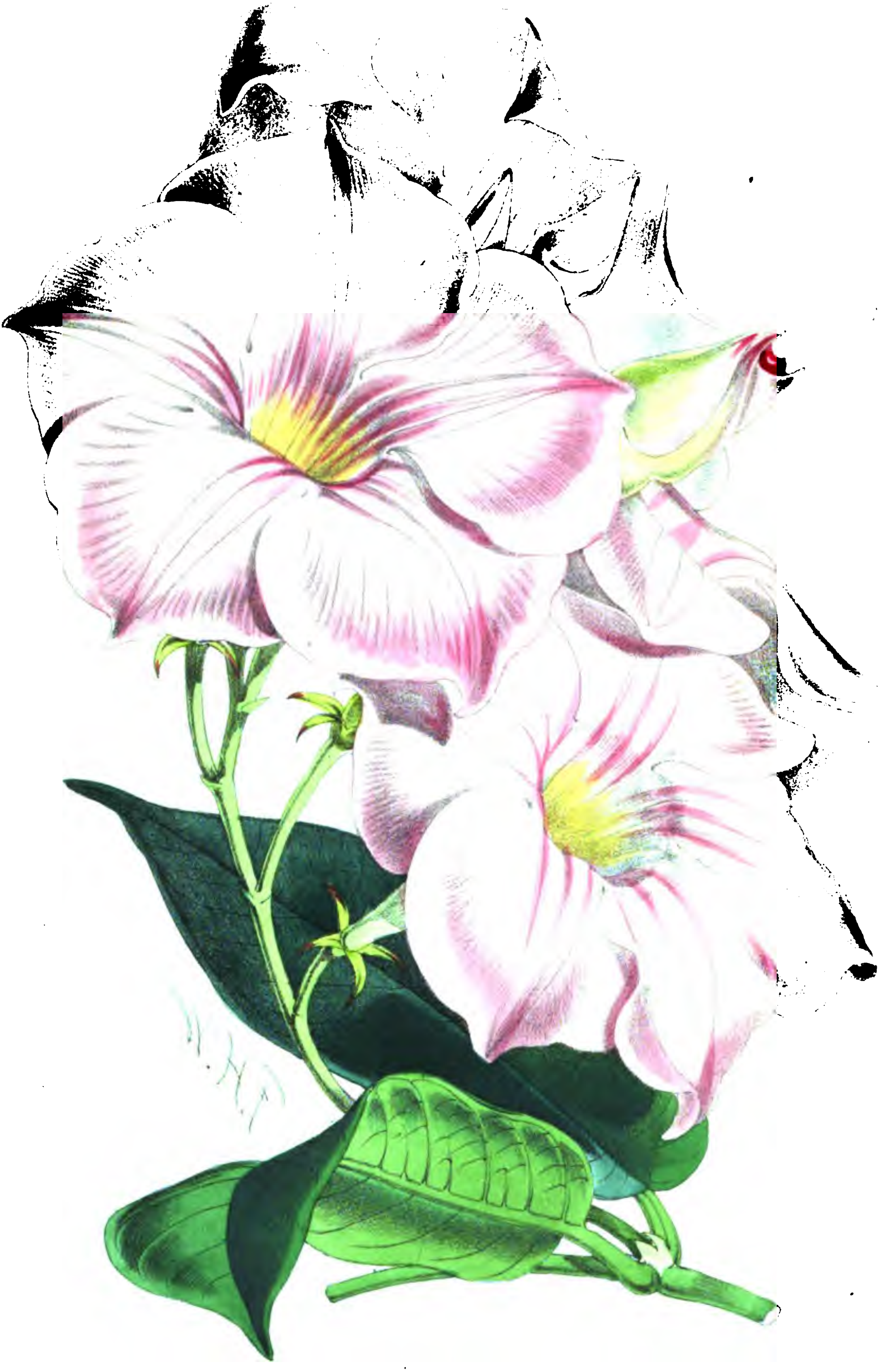
—— The Royal Horticultural Society's Examinations of Gardeners, in December last, yielded the following results. We are glad to notice that the number of candidates was larger than on any previous occasion; and while we heartily congratulate those whose labours have been crowned with success, we recommend those who have fallen short of the highest distinctions to persevere, and carry off honours hereafter.

	Fruit and Veg. Culture.		Floriculture.	
	Cert.	Marks.	Cert.	Marks.
W. Spinks, Chiswick	1st	1225	1st	1080
B. Wynne, Chiswick	1st	1185	1st	1070
F. W. Burbidge, Chiswick	Ext. 2nd	960	1st	1070
F. Hardesty, Chiswick	Ext. 2nd	975	2nd	880
W. Stewart, Chiswick	2nd	845	2nd	740
J. M'Ardle, Chiswick	2nd	795	2nd	770
R. L. Keenan, Kew	Ext. 2nd	1005	1st	1080
A. Stormont, Kew	Ext. 2nd	1085	2nd	860
M. Middleton, Kew	3rd	590	2nd	675
R. Inglis, Kew	3rd	525	..	..
J. J. Bull, R.B.G., Regent's Park	..	455	1st	950
J. H. Hart, Benham Park, Newbury	3rd	580	1st	1080
C. Roberts, Eridge Castle	2nd	750	1st	1020
A. Bradley, Eltham	Ext. 2nd	1080	..	..
J. Williamson, Battersea Park	..	190	2nd	700

—— The theory of Annual Rings in respect to the Formation of Wood, is at least open to occasional misinterpretation, as appears from the evidence of a stem of Wellingtonia recently exhibited by Mr. McNab before the Botanical Society of Edinburgh. In this specimen, it was remarked that from five to ten apparent woody rings, were visible on what is well known to be an annual growth. Several of the known annual growths averaged, and in some cases exceeded, half an inch in breadth; while in a piece of wood, direct from California, not less than twelve distinct prominent rings or markings were visible over half an inch of surface. These trees, it was observed, are most successfully transplanted in summer.

Obituary.

—— Mr. John Stevenson, who had been gardener to the Earl of Durham at Lambton Castle for the last quarter of a century, died on the 21st of January, in the 58th year of his age.



Dipladenia amœna.

J.N. Fitch imp.

DIPLADENIA AMŒNA.

WITH AN ILLUSTRATION.

THIS, which we may at once state is a most valuable acquisition amongst stove plants, has been raised by Mr. Henry Tuke, gardener to R. Nicholls, Esq., Bramley, near Leeds. Mr. Tuke also raised from seed the lovely *Dipladenia amabilis*, which was sent out in 1865 by the Messrs. Backhouse & Son, of York. This latter was the result of a cross between D. splendens and D. crassinoda, the former being the male parent, and the seed was sown in March, 1862. This D. amabilis is a great advance upon D. crassinoda, having a more robust habit, and being of a more brilliant colour, and a freer bloomer.

Mr. Tuke having thus been successful in obtaining this very decided improvement on D. crassinoda, next endeavoured to effect a similar improvement on D. splendens by crossing this fine species with D. amabilis, and the result is a batch of seedlings differing from each other in habit, one of which, that now figured, bloomed last summer, and has been named by Mr. Moore in the *Gardeners' Chronicle*, *Dipladenia amœna*.

This beautiful variety bears a considerable resemblance to D. splendens in colour; but in every respect it is a great improvement on it. In form it is vastly superior, the lobes being stiff and round instead of reflexed and pointed; and in habit, when we state that it partakes of that of the parent D. amabilis, it must be at once seen that in this respect it is also a great improvement on D. splendens. In blooming it is as free as D. amabilis, and has better foliage even than that variety, especially in respect to colour, as it does not brown as the other kinds do, but preserves a glossy green hue through the autumn.

Mr. Tuke is so successful a grower of Dipladenias, that we cannot do better than give a short account of his method of growing them. The soil he uses is composed of rough fibrous peat, broken to the size of walnuts, with a liberal mixture of sand, adding a few rough bones and good drainage, and potting firm. In the winter the plants are taken off the wires or trellis, and are kept dry in a house of medium temperature. If they are wanted for a June exhibition, the plants are started into growth in November or December at the latest. If for August exhibitions the plants are started in February. Mr. Tuke does not plunge the plants, finding, especially in winter, that they do better without. Dipladenias do best by keeping them moderately dry until in good foliage. Many of these plants are killed by over-watering. A moist atmosphere of 65° to 70° is best for early growth, gradually increasing to 80° and 85° as the plants progress. They also do best when grown near the glass and well exposed to the light.

We learn that the stock of this valuable plant will be placed in the hands of Mr. W. Dean, of Shipley, and be sent out by him in the early part of 1869.

M.

BEDDING ROSES.

BRILLIANT and beautiful as the ordinary "bedding plants" are, there are few gardens that can be at once economically and effectively arranged without a certain preparation of *permanent* plants, which once planted, exonerate us from the labour, expense, and risk of removal in autumn, and replanting in spring. Of such, Roses stand in the very first rank. To establish this point we would ask those of our readers who may have taken an interest in gardening, either from the amateur or the professional point of view, over a lengthened period of time, whether they have not *occasionally* met with groups or masses of Roses the richness and effect of which they would gladly see reproduced in their own gardens. The answer will we know be "yes," with a stress laid on the word "occasionally," conveying the impression that the task is not easy to accomplish. But this, in our judgment, is not the case. The task is easy if only the right means are pursued towards its accomplishment.

The Rose as a bedding plant is seldom fairly and properly treated. It is known to be a hardy plant, and is treated as such; that is to say, the ordinary nursery plants are taken at planting time, put out at once, and expected to do for themselves what in the case of ordinary "bedding plants" is done *in advance* by the cultivator. These latter are grown under glass with the utmost care till they become strong, planted out in the most suitable soil that can be made, and afterwards tended with assiduous watchfulness. Now if lovers of Roses would attain a like measure of *immediate* success, they must not shrink from the same forethought and care. It would pay them a handsome rate of interest could they be induced to buy their Bedding Roses a year in advance, grow them the first year in pots, and plant them out in May, after the spring frosts are gone, for then the same brilliant effect would be obtained the first season as with other bedding plants. It is further, more important with permanent bedding plants than with those which are replaced every spring, that the soil should in the first instance be made all that is requisite, because there is not the same opportunity of after modification or renewal. Lovers of Roses treat your favourites with the same consideration and care that your friends give to their "bedding plants"—remembering that from the slower growth of the Rose a longer period of time is required to obtain the strong established plants they work with, and your gardens will be varied and improved by the addition of one of the richest and most effective of bedding plants.

Taken from a practical point of view, bedding Roses may be arranged in three groups according to their habit of growth—the dwarf, the moderate, the free. In a good soil and climate we should prefer the dwarf and moderate, and under less favourable circumstances the free. The following will form a pretty group of four beds of dwarf Roses of neat and equal growth, producing masses of flowers throughout the summer and autumn:—Bourbon Queen (buff), China Fabvier (crimson), Tea-scented Narcisse (yellow), and Bourbon Victor Emanuel (purple). Of moderate growth and nearly equal in freedom of flowering are:—The common China (pink), Cramoisie Supérieure (crimson), Mrs. Bosanquet (white), and Madame Falcot (yellow). Of free or vigorous growth:—Noisettes Fellenberg (crimson), Céline Forestier (yellow), Aimée Vibert (white), and H.P. Gen. Jacqueminot (purple), are among the best. These twelve varieties grouped in fours of equal growth are the first we should claim for our own garden on the ground of their freedom and constancy of bloom. But this by no means exhausts the treasury. A goodly store remains which, if less effective in massing produce flowers of larger size, and approaching more nearly to the florists' standard of beauty. Of these, the descriptions of which will be found in any of the Rose catalogues, we may instance—Hybrid Perpetuals: Anna Alexieff, Baronne Prevost, Beauty of Waltham, Dr. Andry, Duchesse de Morny, Elizabeth Vigneron, General d'Hautpoult, Globosa, Jules Margottin, La Brillante, Lady Suffield, Lord Macaulay, Madame Victor Verdier, Prince Camille de Rohan, Prince de Joinville, Princess of Wales, Sénateur Vaisse, Triomphe de Français, Triomphe de l'Exposition, and Victor Verdier; Bourbon: Souvenir de Malmaison; and Tea-scented: Gloire de Dijon, Safrano, and Sombreuil.

Let us now trace briefly the best method of obtaining as quickly as possible the desired masses of flowers. Remember at the outset a rich deep moderately-strong loam is the soil in which the Rose delights; it should be neither wet nor dry, but moderately moist, and if this is not the natural state of things in the garden, the nearer that it can be approached artificially the better. If budded plants are chosen they may be planted at any time between November and March. If plants on their own roots be preferred, buy them in spring, and grow them in pots the first year plunged in an open situation in the garden, attending to watering and keeping them free of insects; protect them slightly in winter, and plant them out in May. Water carefully when the soil is dry until the roots have taken firm hold of the ground, and for five months in the year the beds will be flushed with blossoms. On the approach of winter a slight protection will again be necessary, especially for the Chinese and Tea-scented kinds. Branches of any evergreen tree or the haulm of Asparagus stuck pretty freely among the plants, but not so thickly as to prevent the circulation of air and encourage an excess of moisture, are the readiest means, and sufficient to accomplish this. Late in February one-half, and early in March the remaining half of these branches may be removed—preparatory to pruning. The varieties of dwarf growth may be pruned very closely; if on their own roots they may be cut down nearly level with the ground, when they will push up from beneath with a surprising strength, and produce immense trusses of flower. The moderate growers should be pruned less closely, and the free or vigorous growers least of all. With the latter, when the growth is very free, it is sometimes desirable to bring a given number of the strong branches into a horizontal position to cover the beds and increase the quantity of flowers. On this point, as on many others, practice is the best and safest instructor.

Bedding Roses are yearly in greater demand, and we often experience the difficulty of the limited number of suitable varieties. "I want a series of beds of Roses on my lawn," says Mr. A., "but the sorts must be of hardy constitution and of compact growth; they must flower freely and continuously, and have at least some fragrance." Desirable qualities no doubt, but qualities still hard to find combined in all shades of colour. Notwithstanding we have some kinds of this character, and there is no reason why we should not make use of these in the present, and hope for a greater variety in the future. If raisers of seedling Roses had selected for freedom and perpetuity of flowering, as well as for size and symmetry in the individual blooms, we feel assured that we might ere now have been in possession of Roses of every hue, masses of which would vie in brilliancy and effect with the most gorgeous denizens of the garden. Fortunately in the olden times, before the Florist's canons had obliterated all other considerations, these qualities were estimated at their true worth, and we have them in great perfection in the first twelve varieties quoted What we want further is the same qualities of freedom and constancy of flowering *in every shade of colour*, so that those who plant their gardens chiefly for effect, may have their Rosarium, as well as those who plant for the beauty of the individual flowers. We should rejoice to find that some of our raisers of seedlings had taken the matter up from this point of view, for we should anticipate important results from powers judiciously employed.

Waltham Cross, N. WILLIAM PAUL.

A FEW WORDS ABOUT SEA-KALE.

ALTHOUGH this delicate and much esteemed vegetable is found in nearly every garden, I cannot help thinking that its cultivation is not so well understood as it deserves, or we should see it more plentiful. I will, therefore, give my mode of management for the benefit of those readers who may have not had a very satisfactory supply.

In November, or as soon as the foliage is dead, I have all my stock of Kale taken up, and potted in 15-inch pots. The roots are trimmed a little, and packed as closely as possible in the pots, which are filled up with dryish soil that will run freely amongst the roots, and are then stood in any convenient place in the open air, and slightly covered with leaves. When it is thought necessary to commence forcing, I have three or four pots taken to the mushroom house, well watered, and then covered with leaves. This done weekly gives a supply of a large dish every day all through the season.

As soon as the Kale is cut, the pots are again placed out of doors, but well covered with leaves to exclude frost, &c. At planting time, which is the end of March or the beginning of April, the roots are all taken out of the pots and sorted, rejecting those which are very old or weakly. With these I plant about half or two-thirds of the portion of ground, allotted to Kale. The remaining part is planted with cuttings of the roots, which make good plants in one season, but not so useful for very early forcing. These cuttings are made in the autumn at the time of potting, when the largest and best pieces of root are selected from the trimmings, cut into 4-inch lengths, and bound, in one heap, to the depth of 6 or 8 inches in any convenient spot in the kitchen garden, where they remain until planting time. Some time during the winter months I have the ground deeply trenched, and very liberally supplied with manure, and it is forked over again before planting.

Oakley Park, Suffolk. W. Robins.

VIOLA CORNUTA AND VIOLA LUTEA.

To say that no flower garden would be complete without Viola cornuta, would not be overrating its merits. Indeed, its colour is quite indispensable in large mixed masses, and its combinations with most of the silver-edged Pelargoniums are truly charming, it being a colour that seems to light up and enliven the whole mass of colouring which surrounds it. While many speak in high praise of this Viola, others complain of its not lasting in flower sufficiently long through the season to be of much value for autumn flower-garden decoration. Now although this is a very old plant, yet, comparatively speaking, it is quite new to the present generation of gardeners, and therefore it is not to be expected that its culture should be perfectly understood by every one.

As a rule all Violas are gross feeders, and therefore should be planted on good ground, plenty of good rotten manure being used, otherwise they exhaust themselves before the autumn; but if planted at the proper season, and the ground properly prepared, they will bloom most profusely until November; indeed, I have seen them as fine in October as in June. I prefer striking from cuttings to dividing the plants; and if they are not planted too early, they will not fail to be in beauty during the whole of the flower-garden season.

The mixture of Viola cornuta with Mangles' Pelargonium, Sensation Chrysanthemum, or Beaton's Variegated Nosegay Pelargonium, &c., was universally admired here last season. Of the latter, a leading article in the *Gardeners' Chronicle* of November 2nd, states that several beds, consisting of an equal mixture of Viola cornuta Purple Queen and Beaton's Variegated Nosegay Pelargonium, afforded one of the most charming combinations of colour ever seen.

Viola lutea, for which we are indebted to Mr. Tyerman, of the Liverpool Botanic Gardens, is a little gem, flowering most profusely both early in spring and late in the autumn. It is a great acquisition to the flower garden; its habit is dwarf, it has neat shining foliage, and is perfectly hardy, but is not so free in growth as Viola cornuta. This also requires good management, and plenty of well-rotted manure; indeed, it should be treated precisely as V. cornuta, though I believe it prefers a moist situation. Both plants come true from seed, although a slight difference in colour may sometimes be detected. On a future occasion I shall offer a few remarks on some other varieties. I have been credibly informed there is a white variety, equal in every respect to Viola cornuta, that will soon be in the market. This will be a real boon.

Osberton Hall, Worksop. EDWARD BENNETT.

VIOLA CORNUTA, of which I last season grew Wills' variety, did remarkably well with us here. It was planted in two large beds, the centres of which were filled with Cloth of Gold and Golden Chain Pelargonium, surrounded by a single row of the Violet, with an edging of Cerastium. In May, when the beds were filled, the Violets were lifted with balls of soil from another bed, where they had been growing all the winter; they were in full bloom at the time, and remained so until the end of October. The soil in which they were grown was very rich with leaf mould; and the seed pods were picked off, since starvation does not favour the blooming qualities of the plant. *Viola lutea* I have not tried, but I hope to do so this season.

Elsenham Hall Gardens. WILLIAM PLESTER.

SEEDLING PINE-APPLES.

EVERY now and then in our horticultural progress we have a seedling Pine-apple cropping up. Like most of my class, I own to a great love of the carefully crossed seedling. The more choice it may be the more interest it excites. I fear also that it frequently leads to over-attention, and not unfrequently to the premature extinction of many great expectations.

Seedling Pine-apples have been always surrounded in my mind by a certain amount of mystery, leading the thoughts some years back, and inducing one to put down the raisers as persons possessed of a great amount of patience, and who deserved to be successful in spite of the fates. How very disappointing, then, is it to find that there is no mystery in the matter after all, and that the patient man is a myth of one's own conjuring up, for seedling Pine-apples may be raised and fruited as quickly as at present many parties fruit their suckers and crowns.

I must confess that any one attempting to cross or raise new Pines must first consider what he wants, because the plants require a good deal of space, while perhaps not one may show the desired improvement, and not one in forty be anything beyond a weed, or fit only for bedding-out. If, moreover, even a fair fruit is produced, our great authorities are careful about bringing out or encouraging any that do not excel our known sorts in some very useful point or appearance. Without this caution, indeed, we should soon be in the greatest confusion both amongst fruit and flowers, and even a good novelty would not be appreciated. We must, therefore, give these censors credit for their good offices, however much we may sometimes sigh over their decisions.

Cliveden. JOHN FLEMING.

SEASONABLE GARDENING HINTS.—APRIL.

THE propagation, potting, and forwarding of "bedding" plants should now be pushed on with all possible despatch, so as to have a fine stock of all kinds, when the time for planting-out arrives. Pelargoniums should be encouraged to grow freely early in the month; they will then be good plants by planting-out time, and need not be pushed on at the last moment. Cuttings of Verbenas put in at the beginning of the month will make good plants for putting out. Calceolarias, which are amongst the most useful of decorative plants, are the most easily wintered of all tender plants; cuttings put into sandy soil under any old lights at the end of October or beginning of November, root and make fine plants with very little trouble.

Plant houses should now have all the air possible; cold cutting winds should indeed be carefully guarded against, but when the weather is mild abundance of air should be given. Proceed with the potting of all plants that require shifting, taking care to perform the operation properly as recommended last month. For autumn and winter flowering, sowings of Cineraria and Primula sinensis should be made at the beginning, and again at the end of the month. The Cineraria seed being small, should be lightly covered; when put into a little heat it will soon germinate, and as soon as the seedlings are strong enough they should be pricked out into pans, and again put into a gentle heat; they will then soon be fit for potting off singly into small pots, and will require one or two shifts after this, and with attention will make fine plants for autumn and winter flowering. In hot weather shading will be necessary for a few hours in the middle of the day to prolong the beauty of plants in flower. Liberal supplies of water must now be given to all plants making young growth—not merely just wetting the surface, as is sometimes done, but when the plants want water they should have sufficient to go through the whole of the soil in the pots, and they should not be again watered until they require it. As soon as green fly is perceived on any plant, fumigate at once with tobacco paper.

The flower garden is now very gay and beautiful with spring flowers, which are earlier than usual in bloom this season, in consequence of the very mild weather we have had since December last. Should severe weather set in, Tulips and other bulbs should be protected from cold winds, hail storms, and frosts. Gladioluses may be planted during the month in deep, rich, well-prepared soil, covering the bulb about 3 inches. Hardy annuals may be sown during the month in the open ground, also half-hardy and tender annuals on slight hotbeds. Mixed borders should now be carefully gone over, and a general rearrangement of the plants should take place; large masses of herbaceous plants should also be divided. After the long continuance of strong winds we have had, it will be advisable to look carefully over all choice specimen trees and shrubs, not only those recently transplanted, but also those sometime established. If any are found blown aside, they should be set upright and be safely secured to a neat stake until they are again well established. Through neglect of this precaution, many choice specimens which happen to be rather exposed to the winds, grow up crooked and unshapely. If the weather towards the end of the month should prove dry, all newly planted trees and shrubs should be well watered to keep the balls moist, and an occasional drenching of water overhead from the barrow engine when no severe frosts are anticipated will be very beneficial. Lawns should be well rolled before the mowing machine goes over them. Walks should be frequently rolled to get them to set firm before dry weather sets in.

Everything in the kitchen garden will now begin to grow apace—weeds as well as vegetables. The hoe should in dry weather be kept constantly going between growing crops. The sowings of all the principal crops of vegetables should be got in as early as possibe; all crops should be sown in drills, as they are then more easily thinned and kept clean. Sow thick, and thin in time, is a safe plan to follow, more especially after cold unfavourable seasons for ripening late seeds like the last season. The general crop of Potatos should be planted without delay. I strongly recommend liming the land well, instead of using too much manure, especially in gardens where the soil is constantly cropped with vegetables. I also recommend trenching the land 2 feet deep if possible. As no sort of Potatos is proof against the disease, and no treatment will prevent it, I advise early planting in trenched ground, and the planting of three or four approved varieties, which are known to do well in the locality. In 1866 I lost the greater part of the Potatos I intended for seed of the Early Ash-leaved Kidney, and I lost very few of Myatt's Prolific. Last year the very converse occurred.

Vines in late houses will now be swelling their buds, and should have a little fire heat and plenty of air. With proper management the Grapes will ripen in September. Amateurs err greatly with regard to giving air and fire heat. To save fuel they keep their houses, even at midsummer, if the weather be dull and wet and cold as it sometimes is, shut up for days with little or no air, and the consequence is, mildew attacks the Vines, spoils the Grapes, and all is disappointment. I would strongly recommend giving the Vines fire heat the whole of the season during the day time, unless a week or two of very extraordinary hot weather should set in always taking care to give an abundance of air at the same time. Those who do this, will not be troubled with mildew, and will be rewarded with well-coloured, highly-flavoured Grapes.

Stourton. M. SAUL.

EUCHARIS AMAZONICA.

TO have the beautiful pure white flowers of Eucharis during the whole of the winter months, when flowers are scarcest, is, I need not say, a great advantage, more especially as they last fresh and beautiful for a long time after being cut. The following is the mode of treatment I adopt, and by which I have them plentifully at that season. The plants are looked over and repotted at intervals during March, April, and May; the soil used being one-half good fibry loam, one-fourth fibry peat, and one-fourth well decayed manure and leaf mould, with a free admixture of silver sand. The pots are provided with good drainage, as during the time of growth the plants require abundance of water; and to allow the superfluous water to run off freely, a layer of half-decayed manure is placed over the bottom drainage. When repotted they are placed in a temperature ranging from 70° to 85° by sun heat, and are kept near the glass, being shaded at first until they begin to grow, after which they have all the light and sun possible. This is of the greatest importance. They should not be placed in plant stoves which are kept shaded in sunny weather, and for this reason ours are grown in the Pine pits. The syringe is freely applied both morning and afternoon, and in the middle of the growing season at closing time also, that they may have the benefit of a nice humid atmosphere the night through. The plants at this time are never allowed to become dry, being watered two or three times a day in hot weather, and twice a-week with manure water made from sheep dung with a little soot.

With this treatment the plants grow vigorously, and have that fine rich, deep green appearance, which is the best sign of vigorous health. By September and October, when the bulbs have finished their growth, they are removed at intervals of three weeks, to secure a succession of bloom from November to March, to a cooler house in which they are placed near the glass in the driest part of the house, and water is gradually withheld from them, barely enough being given to keep the leaves from shrivelling. In a short time they throw up their flower-spikes, and bloom freely all through the winter months.

Crewe Hall. Wm. Whitaker.

PROTECTION OF FRUIT TREES.

ON this subject there is a great discrepancy of opinion, but, however much gardeners may differ, as to the materials, and the methods of applying them, the necessity for protection to insure crops of Apricots, Peaches, and Nectarines is admitted by all. The trees being impatient of anything in the shape of coddling, the covering ought to be removed during the day, and on every favourable opportunity so as to fully expose the trees to sun, light, and air, which are necessary to insure a healthy growth. To facilitate the easy removal of these coverings, various methods are adopted.

I propose here to describe the plan I have pursued for years, which is somewhat different from that which has been recommended by Mr. Robins, (p. 68). I provide a sufficiency of smooth light poles, furnished with hooks at one end, to fix into staples under the coping; the poles are placed aslant at 6 feet apart, and the lower end firmly pressed into the ground at 4 feet from the wall. A lath is attached to the poles under the coping, on which is tacked one side of the frigi domo covering, which is all in one piece, 125 yards long and 8 yards wide. Thin sash cords are fixed to the top under the cover, brought round the cloth, and passed through pullies screwed to the lath along the top at 10 feet apart. Thus the cover is suspended within the cords, and may be drawn to the top clear of the trees. There are rings on each end of the cover, through which is strained a cord to keep the cloth in place when drawn up. With this contrivance, the covering and uncovering is done with the greatest facility.

By this method, the covering is kept securely in its place when drawn up within the grasp of the cords, and consequently is not so subject to be flapped about by the wind, as when used in separate lengths; and I find this a great advantage both as regards the safety of the trees, and the facility of covering them.

Witley Court. Geo. Westland.

THE CULTIVATION OF CHILLI CAPSICUMS.

THOSE who may wish to grow their own Cayenne Pepper so as to have it genuine may very easily do so. The seeds should be sown early in March in a Cucumber or Melon pit, where there is 65° or 70° of heat. The seedlings when large enough should be pricked out into large 60-pots, three in each, in a light soil containing at least one-third leaf mould, as well as plenty of sand. I prefer road grit. After potting they should be put again into the pit, as the moist heat of a dung bed is just what they want at this stage of growth. As soon as they are about 4 inches high their tops should be pinched out, to prevent their being drawn, also to cause them to throw out laterals previous to their being shifted into their fruiting pots (24's). When they are well established in the small pots I shift them into the 24's, using for this shift a stronger compost made up as follows:—Two parts strong yellow loam, two parts rotten dung, and two parts road grit (sandy turf, the parings of the roadside); these are all well chopped up together and mixed with the spade but not sifted. If bottom heat can be given after this shift, it will greatly benefit them.

Should the green fly make its appearance on them they should have a good fumigating with tobacco, for unless they are kept quite clear from the green fly and red spider, they will not ripen their fruit. The red spider is best kept down by frequent syringing in bright sunny weather, once or twice daily.

When the plants have done flowering and show for plenty of fruit, they should be well watered with liquid manure two or three times a-week, and the pots put into a house where there is a good heat if it can be obtained; if not, the stage of the greenhouse will do almost as well, if they are allowed plenty of room for the sun to act fully upon them. I ripened some in the latter way last summer, as well as Tomatos, without any fire heat.

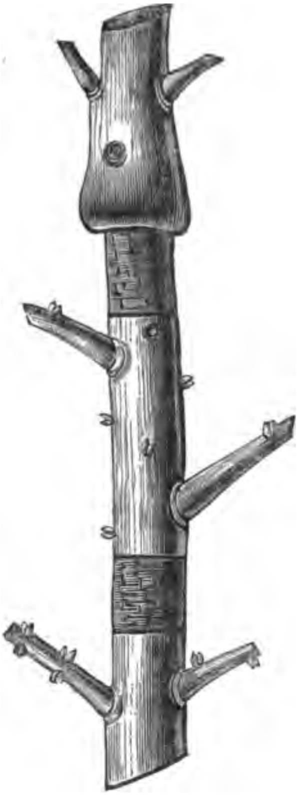
The kind I find the cooks like best, is the small Red Chilli. They prefer this to the larger kinds, or even to the yellow ones, which latter they say look more like currie powder when ground into pepper. The Chillis are of a very bright red if well ripened, and are one of the greatest luxuries in the cooking department of a gentleman's establishment.

Elsenham Hall Gardens. WILLIAM PLESTER.

RING GRAFTING.

LAST spring I obtained a slight success in some experiments I made in grafting rings of bark taken from one sort of tree or shrub, and putting them upon another. The object was to cause the sap to circulate through a channel different to its own, and thus by inducing a commingling of fluids, to cause it to break out into a fresh growth foreign to either. The idea was original; and finding the operation as far regards the bark uniting, to be a practical one, I have thought that by explaining the process to the readers of THE FLORIST, it may lead others to try and find out where a union may be effected, for trees and shrubs widely differing in character and species can be made to unite, and possibly some good cross or sport may be the result.

Mr. Scott has recently stated that he saw the Lilac (*Syringa vulgaris*), growing upon the Ash (*Fraxinus excelsior*), in the Jardin des Plantes at Paris. I have tried the same union by engrafting, and had the plant growing for two or three years, but it ultimately died off. This union suggested to me the idea of trying experiments by ring grafting. Accordingly in the month of April, or, as a rule, as soon as the sap was found to be freely circulating in the different sorts to be operated upon, I selected branches of the different kinds to be tried. I made two horizontal cuts at 1½ inch apart through the bark, and a longitudinal one between them. The bark was then carefully taken off by raising it with the handle of a budding knife. A branch of corresponding size on the tree on which it was to be inserted was chosen, and a piece of similar size taken off, so that the grafted portion might fit in as exactly as possible. The ring of bark was then gently opened and slipped over the branch into its place. A little matting was tied lightly over to keep it secure, and a covering of clay the same as in ordinary grafting completed the operation.



The following are some of the sorts experimented upon :—Pear upon Thorn, Berberis Aquifolium upon Common Barbery, Red Currant upon Black, Red-leaved Oak upon Evergreen Oak, Cotoneaster upon Thorn, Piptanthus nepalensis upon Laburnum, Quince upon Thorn, Cerasus Avium upon C. lusitanica, Lilac upon Ash, and Cedrus Deodara upon Larch. In most of these cases the barks but partly united, and thus for the object intended they were total failures. The last two, however—Lilac on Ash and Deodar on Larch—were operated upon with double rings at about 7 or 8 inches apart, and the union in these is perfect, while the trees are young, healthy, and strong. The Larch has fully doubled its girth above the upper ring, while at the base of its upper junction it has bulged out considerably, similar to a Nectarine or Peach when budded on the Plum, thus showing that the descending sap is interrupted in its downward passage. The Ash is just slightly bulging on the upper side of both rings. It may be some time before any sporting takes places in either case; but such a result may reasonably be expected in due time.

I have thus briefly explained this method of grafting in order to induce others to follow in the same track. It may be as well to observe, that all the ordinary styles of grafting, inarching, or budding are performed for the sake of giving the scion a suitable stock to grow on, and the elongation of its own parts is just stronger or weaker in proportion to the suitableness of the stock on which it has to grow.

Gordon Castle. J. WEBSTER.

SILVER WHITE AND NONSUCH CELERY.

AT the meeting of the Fruit Committee on the 20th of November 1866, a large collection of Celery was exhibited. From this collection Veitch's Silver White, and Ivery's Nonsuch Red were selected as the two best sorts; and from the favourable way in which they were spoken of by the members I was induced to give them a trial in comparison with other popular varieties, all of which were subjected to the same routine of culture. I am very glad to be able to confirm practically the favourable opinion expressed, as these two sorts very materially surpassed the others, not only in flavour and solidity, but also in good-keeping qualities. I did not attempt to prove them for size, although I have no doubt they might be grown as large as any other variety, by the same process of gross feeding, but I am old-fashioned enough to have but little faith in the utility or economy of growing very large Celery. On the contrary I find that which is of a moderate size will be most useful in a gentleman's family. Great size can only be attained at the expense of quality—more particularly of the keeping quality, which is very important. In practice I find that sound firm leafstalks in a small compass and well blanched, are very much preferable to large and coarse sticks, which before they come to table must often have more than two-thirds cut away as useless. Therefore considering that it requires as much space to grow one hundred large plants, as would suffice to grow two hundred of a more moderate size, I think the palm on the score of economy and usefulness must fall to the latter.

Redleaf. JOHN COX.

AËRIAL ROOTS UPON VINES.

IT is remarkable how many different opinions have been advanced from time to time as to the cause of Vines emitting air roots, and recently several correspondents of acknowledged ability have published their views in the pages of this valuable periodical. One says it is occasioned by unripened wood; another that it is for want of reciprocity between root and branches; and another that it is entirely owing to a warm humid atmosphere. Now, as far as my own observations have gone, I unhesitatingly adhere to the latter view; but the most satisfactory way of deciding this vexed question would be to put it to a practical test. Let anyone, who has the opportunity, commence to force two vineries at the same time—say the latter end of October; the Vines to be of the same age, and to be subject to the same amount of fire heat. Let the atmosphere of one house be kept *perfectly dry*, admitting as much air as would be considered safe, and let the atmosphere of the other house be kept as *close* and *humid* as possible. The cultivator would soon be convinced of the real cause of Vines pushing forth air roots. Whether the Vine derives any benefit or *vice versa* from air roots is another question. It is well known that some sorts of grapes produce them much more freely than others. Can any one assign a cause for this?

The Gardens, Cobham Hall. R. Budd.

I AM by no means desirous to make converts. My object is rather to disseminate facts. The evidence I have produced in support of previous statements has hitherto been met only by frivolous objections, which my opponents urge as conclusive. In discussing a question, an opponent ought to answer the objections raised by combating the disputed points. Mr. Cox says, "It is very obvious to me why Vines plunged as described should produce aërial roots," but he has not told us his obvious reasons. A little explanation might put an end to hostilities; but instead of this, he has introduced matter entirely unconnected with the dispute. It has been repeatedly maintained that the emission of aërial roots is principally caused by a deficiency of bottom heat. Now, no discrepancy of that kind existed in the case I refer to, as the temperature was hardly, if ever, below 80°. I have constantly asserted that their appearance is alone due to the presence of atmospheric heat and moisture, quite independent of the state of the soil, and have offered valid reasons for holding this opinion. I argue, not for victory, but for information. It would be, however, superfluous to prolong the conflict while the evidence that I have adduced remains unrefuted, were it not that there is another point on which I would request an explanation from Mr. Cox and those who agree with him. How does it happen, when the moisture has been reduced, for instance when the Vines are in flower, that the aërial roots shrivel at the extremity, and so remain till the former amount is restored, each root then producing two, or three, and sometimes four, young spongioles, which continue to lengthen till the grapes begin to colour, at which stage, more air being admitted and the moisture being permanently withheld, they lose their vitality altogether? Again, in an early vinery where the roots are confined to an outside border, protected, and slightly heated by fermenting material, how is it that aërial roots are not so numerous, or at least not more so, than when the soil has been heated constantly to 80°? These facts have been adduced from practical experiments, extending over more than twelve years, while my opponents build upon one solitary example in support of their position, and even that does not for a moment deserve serious consideration.

What some may consider to be a moist atmosphere, others will designate as a dry one; and so long as the maximum and minimum amount of vapour is calculated by mere sensation, as is almost always the case, so long shall we fail to make the conditions clearly understood. Before we can accurately determine the amount of suspended moisture, we must constantly employ an hygrometer, which will show the temperature of the dew-point with as much certainty as the thermometer tells the degree of heat, or the barometer the weight of the air. To obviate the inconvenience of continued calculation of the difference between the dry and wet bulb, the hygrometrical tables of Mr. Glaisher will be found exceedingly useful.

Tortworth Court. ALEXANDER CRAMB.

ON PANSIES.

THESE, like many other florist flowers, appear to have been somewhat neglected in many localities of late years, though they are real gems for many months of the year. The neglect of them may be partly owing to the losses which one is liable to sustain during the summer months, and partly to their being superseded by the Belgian or fancy varieties, which have of late years certainly been wonderfully improved, and are expected by some growers shortly to eclipse the old varieties altogether. This, however, will be mere matter of taste. Many of the growers around me do not fancy them, and name them "Butterfly Pansies," or "Circus Horses," and so far the old varieties of the *Viola tricolor* are in the ascendant.

The losses which occur in Pansies I attribute to their being grown too long in the same soil. If growers would only use fresh soil every season, and not over-stimulate the growth of the plants, they would bear the parching rays of the summer sun much better than now, while a little natural or artificial shading from the mid-day and afternoon heat would be found beneficial. Watering should be avoided as much as possible; when absolutely necessary it is best done in the evening, generally without the rose on the pot, and rain water should if possible be used.

The dark selfs are now a numerous and rich class, and as we have so many that are really selfs, I consider those with blue or shaded centres should be considered defective; for how can a flower be called a self when there are three or four shades of colour in the ground of it? I consider the white brow essential in the dark selfs. In yellow and white selfs we have made little improvement; still there has been a step or two taken in the right direction. Yellow grounds are perhaps the most esteemed of all, and these now are wonderfully improved, compared with what we had some twenty years ago, when we imagined they had almost reached perfection. White grounds are by many fanciers considered the most chaste and beautiful of the tribe; while many object to the creamy grounds which have of late been introduced, and say there should be a separate class for them. If so, there should also be a separate class for the dark sorts with blue, maroon or shaded centres.

In staging flowers for exhibition I often see a preponderance of dark selfs; this should be avoided. There should never be more than two in pans of six, or three in twelve, and so on. These flowers, being generally in their best state when Tulips are exhibited, would form pleasing additions to the displays of those highly-esteemed floral gems. Those who wish to add a few to their stock, may safely select from the following:—

Dark Selfs.—Alexander Tait, Dux, Glennifer, Lizzie, Miss Muir, Ossian, Robin Hood, Rev. T. Findlay.

Yellow Selfs.—Cloth of Gold, Cherub, Golden Lion, Miss G. Campbell.

White Selfs.—Mrs. James Dunlop, Jamieson's No. 8, Queen of Whites.

Cream Selfs.—Maggie, Emblem.

Yellow Grounds.—Emily Lyle, C. W. R. Ramsay, George Wilson, J. B. Downie, John Downie, Mary Ann, Wallace, William Dean, John Hay, Euclid.

White Grounds.—Countess of Rosslyn, Cupid, Jessie Laird, Lady Lucy Dundas, Lavinia, Miss E. Cochrane, Nymph, Mrs. Hopkins, Princess of Wales, Princess Mary, Pladda.

Winton, Manchester. J. WALKER.

SETTING THE FRUIT OF VINES AND PEACHES.

GREAT fortunes have generally had their foundations laid, by strict attention to small matters, and in gardening operations success is almost impossible without strict attention to minutiæ. It is only the man who is capable of closely observing the habits of plants—who is able to learn their likings and dislikings—their wants and wishes, as it were, who has a right to expect to control and guide their growth, and successfully aid in developing their latent energies; and those only who enthusiastically engage in such matters, whether amateurs or practical gardeners, can fully realise the unalloyed pleasure to be derived from even very partial success in the cultivation of either fruits or flowers.

At this particular season of the year a few remarks on the subject of fruit-setting may prove of interest to some, and be of use to other readers who frequently want information on details, which, from other avocations, they may not have had time to study to the extent they might desire.

Some varieties of Vines, indeed most varieties, set their fruit comparatively freely, without much trouble on the part of the cultivator, further than keeping the temperature a few degrees higher than usual while they are in flower. This is more particularly the case when the general management has been good, and the Vines are in good health. When the Vines are not very healthy, from whatever cause, I have generally observed that the fruit did not set so freely. Muscats, Trentham Black, Black Morocco, and other sorts, even under favourable conditions, do not always set freely, and to prevent this imperfect setting various means are adopted. A common plan is to collect the pollen of other sorts when in flower by spreading out a sheet of paper beneath the clusters while they get a "tap" with the finger to shed the pollen, and by afterwards throwing the pollen thus collected above and around those to be impregnated, by holding the paper beneath them in the same position as before, and striking the under side of the paper time after time with the hand till all are operated on, the process being repeated for a few days in succession—by preference during the middle part of the day and while the sun shines. When this is carefully done success is almost certain, if accompanied with a night temperature of 72° and a corresponding day temperature. When the clusters are large, it will be observed that the shoulders and upper part of the bunch flower first, and the point and lower part last; consequently care must be taken to continue the process till the whole of the flowers are expanded, otherwise the points will not set, and the symmetry of the cluster will be destroyed.

Another simple plan is to go over the clusters when in flower, striking them by jerking the forefinger on them, and thus aiding in the process of impregnation by spreading the pollen, as a breeze of wind would do under more favourable conditions. If this is carefully attended to, and the weather is at all favourable, it will be found that even the shyest setters will have abundance of fruit swelling off when the thinning season comes.

When there is a moderate amount of sunshine at this stage of growth, I do not find it necessary to reduce the ordinary amount of moisture in the atmosphere. It is a prevailing practice amongst good Grape-growers to greatly reduce the amount of moisture at this stage of growth, often, I fear, checking the vigour of the plants, though it may be scarcely perceptible, except in inducing a crop of red spider, the enemy of the Vine under glass.

A free circulation of air is also very important to aid in the setting of the tender Grapes, and to admit of this, if the weather is cloudy, it is advisable to keep a considerable amount of heat in the pipes during the day; also to allow a small amount of ventilation at night if the houses are close-glazed, indeed, where this is the case, a small amount of fresh air should at all seasons and stages of growth be admitted.

In Peach-houses where the wood of the previous year has been well ripened, there is generally, except in early forcing, little difficulty, if the trees are in good health, in getting an abundant "set" of fruit; but where the wood has not been well ripened no skill will cause them to set freely, the flowers all, or nearly all, generally dropping off without setting, the few that do set being on the weaker and consequently the better ripened shoots. In luxuriant-growing young Peach and Nectarine trees in our northern climate, except when forced early, it is often, in wet autumns, next to impossible thoroughly to ripen this young wood. Under these circumstances abundance of blossom is formed, the flowering stage is passed through successfully, and the fruit sets abundantly so that a full crop is anticipated; they swell many of them to the size of peas, after which no progress is made for a week or two, and eventually here and there a fruit swells off while the rest drop, so that by the time the stoning process has been completed, instead of a full crop, a sprinkling only remains. Many reasons are assigned for tho failure. I believe the true one to be imperfectly ripened wood.

A safe course to pursue where Peaches are forced early, and where doubts are entertained of their setting well, is to gently touch the stamens and pistils of the flowers with a camel's hair brush, repeating the operation daily while the pollen is in condition. This entails a considerable amount of trouble, and after all if not carefully performed, disappointment and annoyance is the result.

To prevent all this trouble and the risk of work badly done, I have had all the trellises here placed so as to stand from 16 to 20 inches from the glass, but totally unconnected with the roof, and made so as to vibrate rapidly with a stroke of the hand, thus dispersing the pollen of Vines or Peaches, and sending it in clouds around the flowers. This repeated two or three times during each day, in passing through the houses, saves much valuable time, and the process of impregnation is as surely and successfully aided as when each cluster or flower is separately attended to. Peaches and Vines can thus all be assisted in setting their fruit, whether free-setters or not, at a small cost of time, and in a manner not unlike what occurs in a state of nature, when the soft zephyrs fan their fragrant shades.

The trellis is thus formed:—Suppose a lean-to house 16 feet in width, 35 feet in length, with upright front sashes. Flat iron rods 1 inch in depth, and a quarter of an inch in thickness are placed below each rafter, and screwed at the front to the inside of the wall plate, curving out from it, and rising in proportion to the height of the front sash, turning with a knee, and following the line of the rafter, parallel to it at 10 or 12 inches below it, and screwed to the back wall at the upper end. At each end of the house a rod 1 inch deep and three-quarters of an inch thick, of the same shape as the others, is screwed to the wall plate, end uprights, and back wall. All the rods are bored to admit wires at 10 or 12 inches asunder, the wires being passed through the rods below the rafters, and screwed at each end with small nuts. The rods to prevent bagging should have fully an inch of camber. When the wires are tightened up, and keyed where they pass through the rods, a nice tight trellis is the result, totally unconnected with the roof, and ready to vibrate with the smallest touch of the hand.

Castle Kennedy, Stranraer. ARCHIBALD FOWLER.

WALCHEREN BROCCOLI.

FOR years past this variety has superseded all other autumn Broccoli here. I agree with Mr. Edlington that the White and Purple Cape are useful sorts, but neither are equal in sweetness or tenderness to the Walcheren. Neither are, I think, the Cape varieties so hardy. The Walcheren will stand from 4° to 6° of frost with impunity, and it is in all respects equal to the best Cauliflower. In fact, it is the Cauliflower so highly commended by Mr. Saul; for although a Cauliflower and a Broccoli are offered under the name of the "Walcheren," they are I believe identical.

My practice is to sow the Walcheren five or six times, from April to the middle of July, and to plant any bit of ground that becomes vacant, and can be spared, with it. In mild winters the latest plants have frequently stood over, and come in as spring Cauliflowers. The plantations are carefully looked through all the winter months, and as soon as the heads are fit for use the plants are taken up, and stored away in cellars or pits, where they will keep good a month or six weeks. By liberal planting and careful storing, we are scarcely ever a day without Broccoli or Cauliflower, all the year round. This season the last Walcheren went to table about the end of February, and the first of Grange's Early Cauliflower Broccoli in the first week in March. All through November, December, and January we had abundance of the Walcheren, from ground that yielded good crops of Potatos, Peas, and French Beans. To sum up its merits in one word—it is worth more to us than all the other Broccolis put together.

Hardwicke House, Bury St. Edmunds. D. T. FISH.

NOTES ON LATE GRAPES.

WHILE passing recently through some of our late vineries, I fancied that some readers of the FLORIST AND POMOLOGIST might feel interested to be informed of the keeping qualities of late Grapes. We have here a late vinery, with an almost southern aspect, 102 feet long, and 18 feet wide, with an outside border unprotected from all weathers, rains especially, from which we suffer much. In this house, the subject of my remarks, we have twenty-four Vines of the following varieties:—Four Lady Downe's Seedling, four Muscat Hamburgh, two Black Alicante, two Burchardt's Prince, eleven Barbarossa [Gros Guillaume], and one Mrs. Pince's Black Muscat. There were twelve Barbarossas, but one was cut away last season to accommodate Mrs. Pince's variety.

Now I find that Muscat Hamburgh will not hang like any of the others mentioned above, and should not be planted with such kinds. It shows fine bunches and sets freely, but it requires cutting ere Christmas arrives, and soon changes into good Muscatels. The race for keeping seems to be with Lady Downe's and Barbarossa; they are at present [Feb. 14], fresh, well coloured, and with that fine bloom which alone characterises Grapes fit for the dinner or exhibition table, but I have no doubt that Lady Downe's will hang the longest yet, as the stalks of the berries appear firmer and stronger than those of Barbarossa. I may here just add that Barbarossa is much admired, and grown by my worthy employer, R. T. Crawshay, Esq.

Burchardt's Prince and Alicante come next, and at present they are much the same in appearance as regards condition, although the Prince cannot boast of the fine form, colour, and bloom of its neighbour. As regards their keeping qualities, I find them nothing like equal to Lady Downe's, and Barbarossa. In December and early in January Alicante surpassed all others in the house for appearance, it being so well proportioned in every respect, but I found it giving way soon afterwards. I may remark that I cut Lady Downe's on the 18th of March last year.

Cyfarthfa Castle Gardens, Merthyr Tydvil. JOHN HANNAN.

VARIEGATED ZONAL PELARGONIUMS AS SPECIMENS.*

WHEN it is desirable to cultivate the Variegated Zonal Pelargoniums in pots for decorative purposes, and for the purpose of exhibition, &c., let some of the most promising plants be selected from the autumn-struck cuttings, or from the plants which have been repotted from the flower beds in October. These should be shifted about the middle of February into pots, one size larger than those they have been wintered in, and should be grown upon a stage as near the glass as possible, and in a temperature not lower than 45°, as a minimum. Let them be frequently turned round, to expose all parts of the plant alike to the influence of the solar light, and in order to get them properly balanced. Carefully avoid over-watering, and slightly syringe them on the afternoons of fine days. Avoid by all means placing them in a cold draught, which is fatal to their prosperity, and on that account it is advisable to admit no air as yet by the front lights.

Early in May they may be shifted into six-inch pots, and some of the strongest of them into pots about 8 inches in diameter, using a somewhat rich soil, composed of turfy loam, enriched with a small portion of thoroughly rotted hotbed manure or leaf mould. They may now be placed upon cinder ashes in a cold pit or frame, kept somewhat close, and slightly shaded for a fortnight or so after having been shifted, and should then be very gradually inured to full exposure to sunshine, gentle rains, &c., the sashes, however, being always in readiness, so as to protect them from violent thunderstorms or hail, as well as from heavy or prolonged rainfall.

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* From "A History of Variegated Zonal Pelargoniums," by Peter Grieve, Gardener to the Rev. E. R. Benyon, Culford Hall, Bury St. Edmunds. London: Printed for the Author. An excellent and thoroughly practical treatise on the production and culture of these popular plants.

A few of the shoots may now require to be topped, or they may be staked or tied down to the rim of the pots, in order to lay the foundation, as it were, of a specimen plant. In the training of the plants, however, avoid using more stakes than are absolutely necessary.

By the end of June or by the beginning of July the plants ought to have become beautiful objects for exhibition, or for the decoration of the drawing-room or conservatory, &c. Such plants are also well adapted for suspending by wires, in ornamental baskets, in the last-named structure, or in the open air; for it must be remembered that the more they are exposed to light and air, the more brilliant will be the tints of their leaf-colouring

Culford Hall Gardens. P. GRIEVE.

NOVELTIES, &c., AT FLOWER SHOWS.

WITH spring has returned an abundance of spring flowers, of which a most interesting display took place at the Floral Committee, on March 3rd. Violets are always welcome, and new Violets are rare: hence Mr. Graham's *Violet Victory*, a new tree variety, which was again exhibited on this occasion, is sure to win popular favour; its flowers are single, larger and better shaped than those of Czar, deep violet purple, and very fragrant, and the habit is tree-like, that of the Czar being spreading. The plant did not receive an award, being rather sparingly flowered; but it must win one hereafter. At the same meeting W. Marshall, Esq., of Enfield, had his beautiful collection of *Cattleya Warscewiczii*, three of which, distinguished by popular names, gained first-class certificates; these were *Juno*, a large blush flower with very richly-coloured ruby-purple lip; *Cleopatra*, a large broad-petaled white, with finely-shaped high-coloured lip; and *Tricolor*, a smaller white, with a finely-coloured yellow and purple lip. Mr. Atkins had *Cyclamen Coum album*, a good white variety, and quite an acquisition amongst these beautiful half-hardy flowers. Mr. Cross, gardener at Milchet Park, showed a nice plant of the rare purple-flowered *Lælia elegans Turneri*, having ten flowers on the spike; this had a first-class certificate. Mr. Standish, of Ascot, showed three distinct-looking green-leaved seedling *Aucubas*, named *quercifolia*, *ilicifolia*, and *crassifolia*. J. Day, Esq., of Tottenham, sent *Odontoglossum intermedium*, a form of O. Alexandræ (Bluntii), with a lip interthough they are as yet but young plants, and have not formed a stipes. Both form handsome tufts of bright green leaves, 3 to 5 feet in height.

—— Golden Queen Fuchsia is very similar in the colour of its leaves to Mrs. Pollock Pelargonium. It is a good grower, but blooms very sparingly, and the most attractive feature of the plant is its large tricolor leaves, which are perfectly unique amongst Fuchsias. Golden Fleece is also strictly a bedding variety, with most attractive bronze yellow foliage; it stands all kinds of weather throughout the summer season well, and forms a really beautiful miniature golden hedge, from 6 to 10 inches high, and about as much through. For effect as a yellow ribbon line, Mr. Cannell states that it far exceeds any Pelargonium for effect.

—— Those who make a speciality of spring gardening will be interested in some pretty seedling Primroses Mr. William Paul produced at one of the Meetings of the Floral Committee. They were the progeny from the sixth or seventh year of seeding, and to very novel and even curious forms, were added stout and smooth-edged flowers. Mr. Paul's aim is to induce by successional seeding each flower to produce the hue of colour of its parent; he finds each year a larger proportion of flowers representing the colour of the seed parent, and has, therefore reasonable hope of success.—R. D.

—— As the time for the general planting of Potatos is near at hand, those who are anxious to have fine samples, free from disease, will find their labour well repaid by using new soil of good quality mixed with wood ashes and a little soot; if wood ashes are not easily procured, charcoal is a good substitute. The carbon acts as a preventive.—J. W.

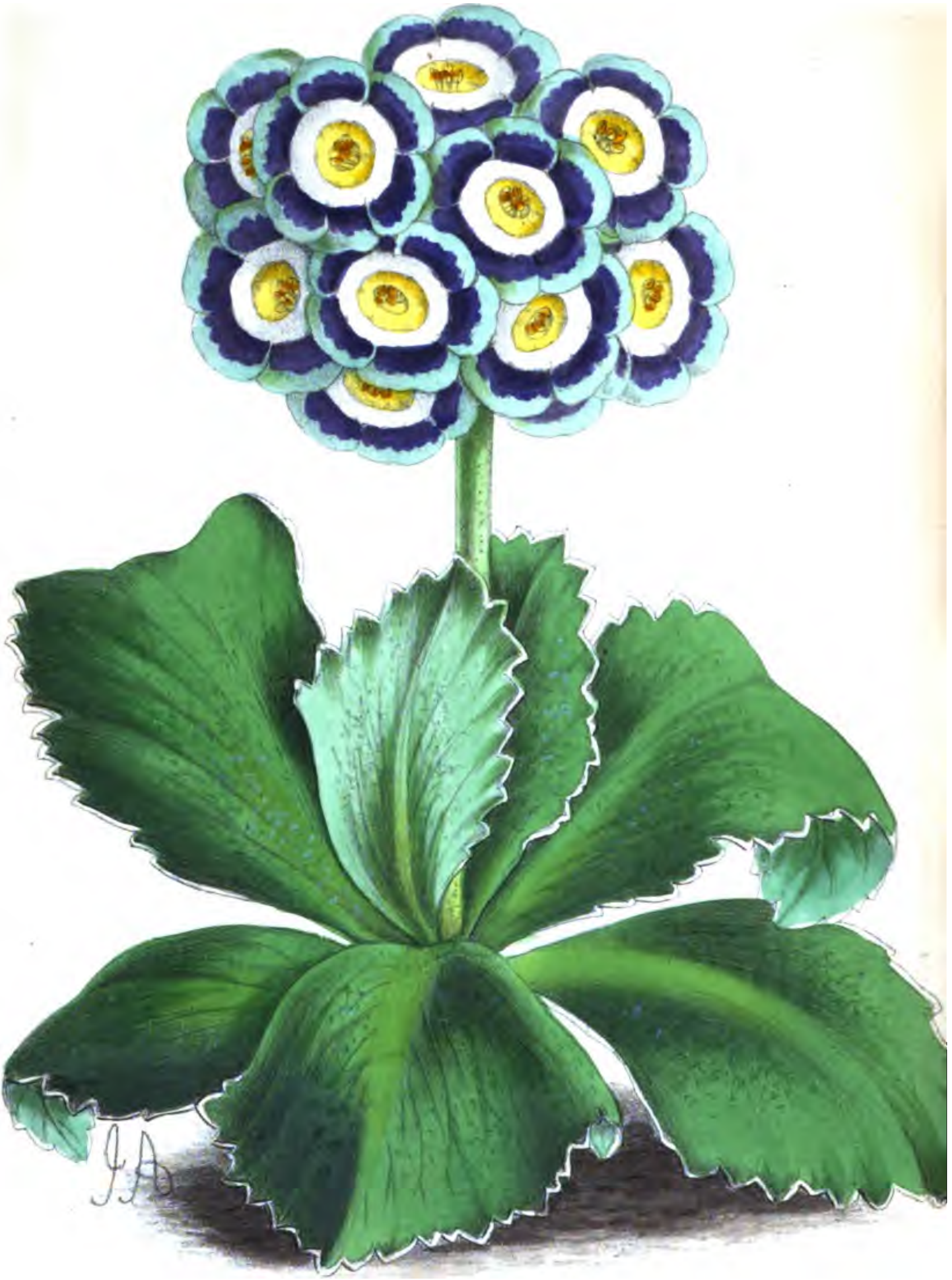
—— Chamærops excelsa, the Chinese Hemp Palm, has recently borne perfect seeds, both at Montpellier and at Bordeaux. At Montpellier a female plant produced fifteen spikes of bloom; pollen-bearing flowers were brought from another plant some fifteen leagues off, and the female plant thereupon became laden with thousands of berries so arranged as to resemble enormous bunches of grapes, nearly three feet in length. The berries are reniform or spheroidal, about the size of a large pea, black, and covered with a fine bloom.

Obituary.

—— Mr. W. E. Seemann, who was well known to botanists as having been for ten years associated with his brother Berthold in the editorship of the "Bonplandia," died at Hanover on the 3rd of March.

—— Mr. C. W. Crocker, died at Torquay, on the 19th of February, aged 35. He was for some time foreman at Kew, where he distinguished himself as an energetic cultivator, but was compelled to resign his post on account of ill-health, and returned to Chichester, where he succeeded his father in the office of verger. He was a frequent contributor to the gardening periodicals.

—— Mr. E. Tucker, of Margate, whose name is so intimately connected with the Grape mildew, *Oidium Tuckeri*, which was first discovered by him, and named in compliment to his skill in recognising the cause of so fearful a malady, died at Margate, on the 9th of March.



Colonel Champneys

AURICULA COLONEL CHAMPNEYS.

WITH AN ILLUSTRATION.

THIS remarkably fine Auricula was raised from the variety called Chapman's Sophia, fertilised with the pollen of Lightbody's Richard Headly. It belongs to the grey-edged class, and is remarkable for its large showy pips, the ground colour of which is a bright violet, partaking of the shade of colour met with in Sophia, while the eye and paste are very round. The truss of flowers is large, bold, and attractive, indicating a free habit of growth and a robust constitution. We learn, moreover, that it is a variety which increases freely. There can be no doubt that this will become a standard variety, for it is not only very distinct, but it is also one of the most attractive flowers in the Slough collection.

We are indebted to Mr. Turner for the opportunity of presenting to our readers the accompanying portrait of this fine novelty, our sketch of which was prepared last year, when an award of a first-class certificate was made to it at one of the spring shows of the Royal Botanic Society. It has been shown again this season, on two occasions in great beauty, on one of which a further award was made to it. M.

THE ROSES AT SOUTH KENSINGTON, APRIL 18TH.

BY far the most beautiful, interesting, and extensive spring show ever witnessed was that of the Royal Horticultural Society, held at South Kensington on the 18th of last month. It was indeed a high festival of the Queen of Flowers. All the doughty champions of the Rose were there. Three tiers of plants, forming a bank several yards in length in the western arcade, produced a brilliant and imposing effect, and the spot was densely packed throughout the later hours of the afternoon by a crowd of distinguished and admiring visitors. And well it might be so, for they who missed seeing these Roses missed one of the grandest and most interesting of recent Rose shows. The plants were for the most part well grown—with the exception of Bouton d'Or, Napoleon III., and one or two others, admirably grown. The flowers were of large size and finely formed, and they retained their freshness till the last hour. To my fancy, *exhibited* Roses at the end of June and beginning of July seldom bear comparison with these children of spring, which are moved and placed under the manifest advantages of a cooler atmosphere.

The new Roses were naturally most closely scrutinised by those who take an interest in the progress of this flower. Of the twenty-four new varieties recommended by me in the Florist (p. 4, 5), twenty were exhibited; and of the remaining four, which are very scarce, two are known to be of first-rate quality. Of the novelties of 1867 I saw but one, *Madame la Baronne de Rothschild*, and this was really new—new in colour, new in character, and promising to be one of the grandest of recent Roses. The colour is a delicate soft rose, shaded with white, the petals are large, thick, smooth, and beautifully rounded, and the flower very large. I saw this Rose with the grower at Lyons last year, and marked it as the *best I had seen* on that journey. *Monsieur Furtado* was in great beauty; in one instance the flowers perfect in form, the colour (sulphur) clear, full, and spotless. *Souvenir de Monsieur Boll* was one of the best Roses in the exhibition, the flowers reddish cerise, large, full, and of perfect form and colour. The constitution of this Rose also appears good, and the habit vigorous. *Madame Margottin* was another gem, and no lover of Roses could look at it without wishing to possess it. The hues in this instance were cream colour, with dark citron centres; the flowers, for a Tea Rose, large, and of good shape, and the plant of good constitution. *Mdlle. Annie Wood* held her own against all rivals of her complexion, clear red, a large, pale, and well-formed flower. *Madeleine Nonin* was in fine trim, the large globes of rosy pink flowers attracting much notice, although the colour was in some instances pronounced objectionable; it is, however, distinct, something in the way of Baron Gonella, and in my judgment desirable. *Paul Verdier*, a bright dark Rose, was good, but probably at present not a very good autumn Rose. *Charles Verdier*, with flowers of a rosy flesh colour, promises great things, and will doubtless become a standard variety. *Horace Vernet* was also beautiful, velvety red shaded with dark crimson, the petals broad and round, the flowers large and full. *Madame George Paul* is a dark Beauty of Waltham, large, full, and very showy. *Madame Rival* was pretty and promising, and likely to be even better grown out of doors than under glass, the colour pale glossy rose, the flowers large, and of good form. *François Treyve* took a position for size and brilliancy of colour, dark shining scarlet, quite in advance of his compeers. The flowers were in this instance wanting in smoothness, but this might be, and probably was, an occasional rather than a fixed feature. *Monsieur Plaisançon*, a large well-shaped purple Rose, was also worthy of especial notice. *Antoine Ducher*, dark red, and *Thorin*, bright rose, were also good.

Turning to the older varieties which formed the greater bulk of the Show, the flesh-coloured Caroline de Sansal was shown in the most perfect state, with many large, finely-shaped flowers, without spot or blemish. Elizabeth Vigneron, rosy pink, had some score of flowers, two over 6 inches in diameter. It may not be generally known that this is one of the finest of autumn Roses out of doors. Céline Forestier, pale yellow, was in beautiful condition, in several instances the plants covered with bloom, the branches drooping with the load of flowers. Beauty of Waltham, cherry colour to carmine, was as large, clear, and lovely as ever. Madame de St. Joseph, salmon pink, had numerous oval-shaped flowers, distinct in colour, and very beautiful. Madame Willermoz creamy white with salmon centre, was also good, and must still be considered one of the very best of pale Roses. Of other old kinds François Lacharme, carmine; Victor Verdier, rose; Anna Alexieff, rose; Leopold Hausburg, carmine and purple; President, rosy salmon; and Comtesse de Brassard, a Tea Rose, with large well-formed cupped yellow flowers, were among the best.

Of cut Roses, of which there were ten boxes, Triomphe de Guillot fils, a salmon-coloured Tea Rose, was large, pale in colour and finely formed. Of other Noisettes and Teas, Céline Forestier, Lamarque, Solfaterre, Cloth of Gold, Maréchal Niel, Alba rosea, Souvenir d'Elise, Devoniensis, Enfant de Lyon, and Gloire de Dijon were shown in fine condition, the unexpanded buds of the latter as large as swans' eggs. Among other cut Roses, differing from those already noted as having been shown in pots, Mdlle. Therèse Levet, pink; Princess of Wales, red shaded with bright purple; Madame Derrieux Donville, glossy rose; Comtesse de Jaucourt, rosy flesh colour; and Baronne Haussman, carmine, were the most remarkable.

Waltham Cross, London, N. WILLIAM PAUL.

GERMINATION OF GENTIANA ACAULIS.

IT would be a curious inquiry how many hundreds—shall we say thousands?—of packets of seed of this popular perennial are annually sown without yielding a single plant in return. Certain it is that failure is the rule, and success the exception; and yet no plant may be more readily raised if the requisite conditions are complied with. Amateurs are in general too apt to assume that, because many perennials are readily and easily raised from seeds, any failure to germinate can only arise from defective quality. There are, however, a considerable number of plants of this class, the seeds of which appear by keeping to become so indurated, that they will never germinate if sown in the ordinary way; and of these the Gentiana acaulis is a notable example. It is true the difficulty in question may to a great extent be obviated by sowing the seeds as soon as ripe, or very soon after maturity, but in the case of seeds which have been kept through the winter for vending in spring, and which constitute by far the larger part of the bulk sold, some other procedure is indispensable.

The remedy I have to suggest is the very old and simple one, of a preliminary steeping in cold or tepid water. In the case of the Gentiana acaulis this steeping may be prolonged to two or even three days without injury to the seed. The water should then be drained off as much as possible, and a pinch of dry silver sand mixed with the seed to absorb excess of moisture, the sowing being then completed in the ordinary way. During the summer months the seed pan will need the usual routine attention of watering, weeding, and shading; but the amateur must not expect seedlings before the end of the following winter, about which time there will be a general upheaving of the soil, indicating the resurrection of the seeds. It will often happen that during the autumn and winter the soil will become more or less coated with liverwort and moss, which if left undisturbed would seriously impede the growth of the seeds. It is, therefore, a good plan to sow these so deeply—say one-third of an inch, that at the end of January the surface soil with its incrustations may be completely skinned without injury to the seed, and if the latter should by the operation be unduly exposed, a thin covering of fresh soil may be given. By the above method with ordinary care success is certain, and I may add, that with some modification, it is equally applicable to many other plants of reputed obstinate growth, to which I am unable now specially to refer.

Ipswich. W. Thompson.

NEW HYBRIDS OF COLEUS.

MR. BAUSE, the foreman in the plant department at Chiswick, has been very successful in an attempt to produce hybrids of the Coleus family. A considerable number has been raised, the materials operated on being the following:—C. Verschaffeltii as the seed-bearing parent, was fertilised by C. Veitchii, by C. Gibsoni, and by C. Blumei. The novel forms which have been produced range in two series, the one having plane crenated leaves, as in C. Veitchii, and the other having inciso-dentate frilled leaves, as in C. Verschaffeltii. The following selected kinds have been recently offered for sale by auction, and realised upwards of £890 :—

Plane-Leaved Series.

C. Berkeleyi (Verschaffeltii × Veitchii): leaves rich velvety chocolate purple, the tips of the crenatures only being green. A beautiful and richly coloured plant, in which nearly the whole surface is of a velvety purple hue, which is well displayed, from the flatness of the foliage.

C. Marshallii (Verschaffeltii × Veitchii): leaves rich chocolate purple, the base of the midrib and the crenatures green, so as just to form a narrow green margin. This has the green edge more apparent than in C. Berkeleyi.

C. Saundersii (Verschaffeltii × Veitchii): leaves deep chocolate purple in the centre, somewhat mottled and of a pale bronzy tint towards the edge, which has a broadish band of green broken through with purplish bronzy reticulations. The broader mottled green and bronze margin brings this near to C. Veitchii, to which it is, however, far superior in beauty.

C. Dixii (Verschaffeltii × Veitchii): leaves dark chocolate purple in the centre, feathering out through the broadish bright green margin, which is nearly an inch wide, the crenatures narrowly purple-edged. A very brightly coloured and effective sort, from the strong contrast between the rich green and purple.

C. Ruckeri (Verschaffeltii × Gibsoni): leaves deep purple throughout on both surfaces. A fine sturdy-growing dark-leaved sort, having very much the colour of Perilla nankinensis.

C. Murrayi (Verschaffeltii × Gibsoni): leaves green, pinnately marked along the principal veins with bars of dark purple, which sometimes coalesce, the rest of the surface showing through from beneath the purple reticulations, which are also evenly and strongly marked on the under surface. A more evenly and more fully coloured form of C. Gibsoni.

Frilled-Leaved Series.

C. Bausei (Verschaffeltii × Veitchii): leaves of a rich velvety chocolate purple, green towards the base, and at the extreme margin. A fine distinct-looking plant, richly coloured, the dark colour nicely relieved by the slight green margin, which lightens up the whole plant.

C. Scottii (Verschaffeltii × Gibsoni): leaves bright green, everywhere traversed by deep purple veins, here and there coalescing into blotches, the under surface similarly marked, but brighter. A very distinct and elegant plant, having the markings of a deep tint of purple, but well relieved by the green spaces between the dark-coloured reticulations.

C. Clarkei (Verschaffeltii × Gibsoni): leaves green above, with the edges of the teeth purple, and showing through the dark purple venation with which the under surface is almost everywhere marked. One of the darker-tinted sorts, having the markings of the reticulated character.

C. Batemanii (Verschaffeltii × Gibsoni): leaves deep purple above and beneath, here and there very slightly mottled with green. This variety may be regarded as the incised counterpart of C. Ruckeri, having almost self-coloured deep purple leaves.

C. Wilsoni (Verschaffeltii × Veitchii): leaves of a rich velvety chocolate, shaded with purple, the base of the leaf and the teeth slightly tipped with the same colour. A very elegant mottled sort.

C. Reevesii (Verschaffeltii × Blumei); leaves green, mottled with bronze and purple, sparingly dotted towards the base, and laid on in close reticulations and patches towards the edge, the centre being deeply tinted and entirely of a dark colour, and the teeth green, with narrow purple edges.

T. M.

PINUS LINDLEYANA.

THIS bold robust-habited Pinus, always brings to my mind the man after whom it is named. I never pass the tree without thinking of Dr. Lindley, one of the most scientific, clever men of our time.

We have here a very nice tree of this noble, long-leaved, distinct Pine, which, as I have said is robust, and of a romantic habit of growth. Its young wood is during winter of a beautiful bronze or copper colour, as also is the sheath of its leaves, which is above an inch in length. The leaves themselves are from 8 to 10 inches long, and generally five in a sheath, growing all round the branch, stiff, robust, and erect, of a dark bluish green. The tree is altogether very handsome in appearance, especially on a beautiful sunny morning or evening with a waft of wind. Here it is established in rather a sheltered situation, and stands pretty well; but in many places I fear it would be found too tender.

Bicton Gardens. James Barnes.

COLOURED-LEAVED BEDDING PLANTS.

EXPERIENCE is the best teacher as to the merits of bedding plants. As, therefore, the time will soon come for propagating for the coming season, I offer a few observations based on my own experience during the past season. Plants which prove a failure in one garden will often do altogether as well in another, for soil, situation, and management have much to do with the success of flower-garden plants.

Coleus Verschaffeltii disappointed me very much, some four or five years ago, and I quite gave up growing it for bedding. In July, 1866, however, on a show day at the Royal Horticultural Gardens, I had an opportunity of seeing what a grand thing it was, as growing in the large vase there. I saw it also on the same day at Battersea Park in such beautiful condition, that I was induced to inquire about the management of the plants, and I learned that they were grown and shifted-on into 32-sized pots then plunged, instead of being turned out, after all the other plants were put in their summer quarters. On the first week in June, 1867, I filled two raised beds as follows: In the centre of each was a standard Heliotrope 4 feet high; around this, nearly filling the bed, was the Coleus plunged in pots; and for an edging I planted the white Ivy-leaved Pelargonium to hang down over the stones with which the beds were raised. Thus treated, the Coleus was everything that could be desired, maintaining that beautiful velvety appearance that I had previously seen in the London gardens until destroyed by frost at the end of October.

The *Iresine Herbstii* has pleased me very much as a bedder. I selected rather a favourable bed for it, in the coolest part of the garden, and filled the centre with variegated Veronica, which was surrounded by a double row of the Iresine for an edging. As both the Veronica and the Iresine are thirsty subjects, they got a good watering about twice a-week, which made them grow freely. The foliage was very striking. The light variegation of the Veronica added very much to the effect of the rich crimson of the Iresine, which is of quite a distinct colour from the Coleus.

The *Amaranthus melancholicus ruber* I have quite given up. Last season I tried *A. bicolor* and *A. tricolor*, as well as melancholicus; but I find them all very impatient of wet, and they are the first plants in the garden to be cut down by the autumn frosts.

The Golden-leaved Honeysuckle (*Lonicera aureo-reticulata*), I find a very pleasing and striking plant for an edging around a bed filled with the Pelargonium named Brilliant. With us it is quite hardy; it has been planted in the same bed about four years, and is trained on wires about 6 inches high and kept stopped. It requires a little management to keep it neat, but it is then telling throughout the summer months.

Elsenham Hall Gardens. WILLIAM PLESTER.

ROOT CULTURE OF FRUIT TREES.

QUITE agreeing with Mr. Fish that it is of the greatest importance that we secure a healthy root action in our fruit trees, I yet differ from him entirely in thinking it necessary that we should give up our wall borders wholly for that purpose. No: the sacrifice is far too great, and such as would, I think, make most persons pause before building garden walls to enclose ground of which, in some cases, the twelfth part, and that, too, the most valuable for the purpose, would not be available for the growing of vegetables. Let the healthy medium be increased in depth, and all other circumstances being equal, I question much if a perceptible difference could be seen in a cropped and uncropped border, provided that too long an interval is not allowed to elapse between diggings, that the roots may not at any time be liable to receive too great a check.

I may perhaps be accused of sounding my own trumpet, but in support of what I have said I must mention that we have at this place, perhaps one of the best Peach walls in the kingdom, from which we never fail to get a full crop of excellent fruit. Our border I endeavour to get dug a full spade's depth twice in the year, and on it I grow Cabbage, Cauliflower, Peas, Beans—in fact anything that circumstances may require. I must not fail to observe that we give the trees every possible attention in pruning, disbudding, thinning of fruit, and syringing. We are also careful about netting in spring to protect the blossom from frost, the details of which I shall be pleased hereafter to communicate.

Gopsall Hall, Atherstone. EMANUEL SAGE.

PROPAGATION OF CENTAUREA CANDIDISSIMA.

IT seems almost superfluous to attempt to advance anything new concerning this useful plant, so much has been written of late respecting it; but there are one or two important points which have not, I think, been noticed by other writers, and which some of the numerous readers of the FLORIST may be glad to be made acquainted with. In briefly describing our method of propagation, I will simply state that about the beginning of January we place the old plants in a temperature of from 55° to 60° and as soon as they show signs of growing, the tops of the shoots are pinched-off, and a few of the leaves removed. This will induce them to throw out a succession of side shoots, and as soon as these shoots have made four or five leaves, they are stripped—not cut off, and inserted singly in 2-inch pots, and placed in the propagating house. Now, the placing the cuttings singly in small pots is the point to which I wish to direct special attention. Some cultivators advocate placing several cuttings in a pot or pan; but when taken out to be potted-off, most of the roots are certain to be broken in the operation, so weakly are they attached to the stem; whereas if placed one in a pot, as described, they can be transferred to larger pots without receiving the least check, consequently a great deal of time and trouble is saved.

As soon as the cuttings have tolerably well filled the 2-inch pots with roots they are shifted into 4½-inch ones, using a compost of loam, leaf mould, sand, and a little peat. They are again placed in a temperature of 60° till they get firmly established, when they are removed to cold frames, and kept moderately close for a week or so. Here they remain until the middle of May, when they are plunged in their summer quarters in the flower garden. We never turn them out of pots. This is done to prevent the roots being broken off when taken up in the autumn, which is as likely to occur as when they are taken out of the cutting pot or pan; moreover, the plants winter better.

To grow it to perfection, this plant should occupy a dry and sunny position. This is important, as few plants are so impatient of damp and stagnant air, and I believe that the want of a dry and airy situation is often the cause of the leaves becoming brown and decayed. In confirmation of this, I may state that we had it in charming condition in small round beds last season; while but a few yards distant, where it was employed as an inner band to a large circular bed, and was not so much exposed to the sun and air, some of the leaves became quite brown, clearly indicating that more sun and air were required. The small round beds referred to were planted alternately with Coleus Verschaffelti, and were most effective, even at a long distance, looking like cushions of crimson velvet between groups of silver plumes. I fear I have trespassed too much on your valuable space, but having heard it intimated that some of our great "bedders-out" contemplate discarding this indispensable plant from their flower gardens, I felt anxious to bring our mode of treatment, which has always been a successful one, under their notice.

The Gardens, Cobham Hall. R. BUDD.

THE POT MARIGOLD.

WITH a dwarfer habit, and with a more lengthened blooming season, I am under the impression that this old annual would take first rank as a yellow bedder, and where Calceolarias fail it would make no mean substitute. I planted two long lines of it here this season, and for some weeks they were indeed most dazzling, forming as fine an object as anything in the garden. Some of the plants produced beautiful blooms, as double and as finely formed as a perfect Ranunculus. Where time is at command, I have no doubt that the blooming season would be prolonged to a considerable extent by picking of the seed heads. I hope some of our great annual improvers will take it in hand, and improve it to the same extent they have done various other common annuals, this being one everybody can grow.

Wrotham Park. JOHN EDLINGTON.

SEASONABLE GARDENING HINTS.—MAY.

THERE is no other month in which a gardener has to attend to so many and such important matters as during the month of May. Indoors and out-doors everything requires prompt action and unceasing attention, in order to ensure success. Delay or neglect now, will result in failure more or less.

As soon as the pits and frames are cleared of the "bedding" plants, they should be got ready for other purposes. They may be appropriated either to the growth of tender annuals, or the growth of softwooded plants for summer and autumn decoration, or used for young specimens of hard-wooded greenhouse plants, or for the growth of Cucumbers or Melons.

All plants in-doors will now need great attention in watering; they must on no account be allowed to suffer for want of water, neither must they have too much given them. Plants not in flower should be occasionally syringed. No insects must be allowed to establish themselves on any plants. If they do they will soon multiply, and the difficulty of dislodging them will be greater. All young plants potted early in the season will now be growing away freely, and will require some attention in stopping the shoots, and in tying-out and training to the desired form. I must again urge the necessity of giving all the air possible that the state of the weather will permit. Insects, plants "drawn up," weak growth, and short-lived specimens, are some of the results of want of air and light. As soon as the flowers of Azaleas and other greenhouse plants begin to fade, they should be all picked off at once.

The chief work in the flower garden the latter part of the month will be putting out the "bedding" plants. If the plants have been properly hardened-off (which they should be), this work may be commenced after the middle of the month should the weather be mild and favourable. I strongly recommend deep cultivation, and prefer making the soil of good depth to using too much manure. If the soil be of a light sandy nature, some manure may be mixed with it for Variegated Pelargoniums, and if the soil be strong and heavy, leaf mould may be added to it. I would also advise planting deeply; the roots will soon strike downwards—their natural tendency, and the plants will by the middle of June, when some people are in the height of their planting, be able to stand the hot weather without the constant use of the watering pot. Mixed borders should now be gone carefully over, all plants that may require it should be tied-up neatly, the borders made clean, and all the vacant places filled up with Dahlias, Fuchsias, Heliotropes, Salvias, &c. The runners of Neapolitan Violets should now be taken off and pricked-out on a north border, about a foot apart every way; they should be watered occasionally until they get established.

One of the principal operations in the kitchen garden will be the timely and proper thinning of all the young growing crops. The ground between the rows must be kept frequently stirred with a hoe. Early Potatos must be kept well earthed-up as they grow. A few rows of early Celery should be put out, and a quantity of young plants should be pricked-out for planting late. Towards the end of the month a good sowing of the true Walcheren Cauliflower should be made for next autumn and winter use. Spring-sown Cauliflowers and Lettuces should be planted. Sowings of Peas, Broad Beans, Kidney Beans, Turnips, Spinach, and Lettuces should be made, to come into use after those sown last month.

the fact that he recommends the soil to be placed sloping to the stem of the tree, so as to admit of the retention of water, I also infer that Mr. McBey's soil or subsoil may be of a dry or porous nature. If all the circumstances in his case are as here presumed, I am not sure that he really plants too deep.

I agree that "we must either give up digging and cropping the fruit-tree borders, or else put the proper soil down, for the roots should be below instead of on the top." However, I do not exactly see how by encouraging the roots to the surface we are thwarting Nature, nor why we should not mulch them when there with rotten manure, to prevent them from being withered with drought in summer, or killed with cold in winter. On the contrary, it is certain that Nature does entice roots to the surface, and guards them carefully when there against either of these catastrophes, by her general covering of shed leaves.

More singular still, although "Plant deep, deep, deep," is the constant refrain of Mr. McBey's paper, it does not appear after all that he himself is a deep planter. He spreads his roots out horizontally on a firm, smooth foundation, within 1 foot of the surface. This is really the fleetest possible planting at all consistent with surface-cropping. He also seems to forget that roots will grow upwards as well, and possibly much better and faster than downwards. It is a misapplication of terms to call a root bed only 12 inches from the surface a deep, deep bed. If, as this writer assures us, the ground is warmer at 2½ feet deep than at 1 foot, and warmth is so essential to the due discharge of the winter duties of the roots, why was not the warmest place chosen for their chief field of labour? [As we understand him, Mr. McBey recommends placing a deep bed of good soil beneath the roots, to entice them downwards.—Ed.]

If Mr. McBey will answer these questions, I may endeavour to show, that although we must as a rule (for there are many exceptions) dig deep to find the gold, we must plant, not deep but shallow to find heavy crops of luscious fruit.

Hardwicke. D. T. Fish.

A PANSY MAN ON PANSIES.

I AM not about to write upon the culture of my favourite flower, as that has been done so often; but an article on Pansies by my friend Mr. J. Walker, of Winton (p. 87), being very *apropos* to some remarks on the exhibition of these flowers, jotted down by me a short time ago in connection with some suggestions for the consideration of a floral committee in Scotland, that I have thought my ideas might be appreciated by some readers of the Florist, of which, doubtless, many are Pansy-growers. I believe that Pansies are favourites with most florists, and generally with all classes of visitors at floral exhibitions, at which it will be observed that where there are Pansies staged, there will be found an admiring and criticising throng.

Mr. Walker's remarks on the class of Pansies known as dark selfs confirm what I have noticed with surprise and regret, and have endeavoured to protest against—viz., the feeling that seems to be arising among many growers, both in England and Scotland, against the dark selfs. This seems to me the only inference to be drawn from the new system advocated and to a great extent adopted, of restricting the number of dark flowers in a competing stand, *without at the same time placing a like restriction on the other classes.* I have been told by a gentleman who is frequently a judge at the Scottish Pansy exhibitions, that dark selfs are now counted *nil* in judging a stand of mixed blooms. Now, I cannot help thinking that this system is a great mistake, for it can scarcely be disputed that the dark selfs are as yet by far the most perfect, and therefore the finest Pansies we have; and on these grounds I demur to their being in a manner thrown aside. It cannot be said that there is want of variety in this class—at least I have never thought them behind the others in this respect, but rather the contrary. I would also hesitate to adopt Mr. Walker's opinion, that the dark shaded flowers should be discarded as defective, on the plea that they are not strictly selfs, as I consider that the shading is in many cases really beautiful; for instance, the varieties Alex. McNab and Masterpiece are shaded selfs, and are two of the finest and most successful competing flowers yet raised. Moreover, this same plea might be urged with like force for discarding white and yellow selfs until they can be had without the dark blotch in the centre. Whether that would be an improvement or not, I will not take upon me to say, before I have seen such produced. In thus making an appeal in behalf of the dark selfs, or whatever they may be called, I do not wish it to be understood that I mean thereby to undervalue the other classes of Pansies; what I would like to see is equal justice accorded to all classes in judging, leaving it to the discretion of the exhibitor to stage what he may consider his best blooms irrespective of colours. All other points being equal, the better variety of colours would have the preference.

I have also strongly advocated the cause of the new Fancy class of Pansies, the "Circus Horses," as our Manchester friends are pleased to call them, which from their first appearance I have taken into favour; and although many florists have turned up their noses at them, I have always been of opinion that they will soon become as great favourites as, if they do not altogether supersede, the old-fashioned Pansies. I think that time is not far distant, taking into consideration the rapid improvement that the fancies have made during the very short time since they have been introduced. Their form at the time of their first appearance may well have gained for them the name of "Butterfly Pansies;" but in this respect they can scarcely now be said to be deficient, and they are advancing towards perfection in all the points of a good Pansy at a rate far beyond what the other varieties ever did—a fact no doubt attributable to hybridising, and thereby combining the fine colours of the Belgian varieties, with the already-attained fine form of the older class. In the meantime the former are decidedly gaining favour with Pansy-growers in Scotland. They are of a much more robust habit, and I consider them more hardy and altogether easier to grow than the latter. The colours are new, rich, and most beautiful, and so various that there seems to be no end to variety in this respect alone. I have at various times had "a crack" with Mr. John Downie, of Edinburgh, than whom I need hardly say no man in the kingdom is a better authority on the subject, nor has done more to raise Pansies to their present state of favour and perfection; and I am glad to be able to quote him as entirely coinciding with my opinion, that the fancy Pansies will yet, and that soon, be the favourites. I am sure that many English florists, and especially our Manchester friends, only require to see the fancies as they have been exhibited by Messrs. Downie, Laird, & Laing so successfully throughout England and Scotland, and last year, if I mistake not, in Paris, to obtain for them (the fancies), a more favourable opinion.

Violetville, Scotland. H. J.

MR. WALKER has given you a few remarks on Pansies, but he seems to be a little at sea on the subject. There will always be two separate classes of Pansies—the Show or Florists' varieties and the Fancies. The two families are so distinct that they should not be shown in the same stand; and although the florist will, as a matter of course, stick to the show Pansy and ignore fancy kinds, the latter, with their fantastic markings and beautiful colours, find most favour with the ladies and non-professing florists.

I find the Pansy a very easy plant to grow, and I could just now (April 8), supply some thousand plants in vigorous health, which really have given us no trouble during the winter. Contrary to what Mr. Walker states, we grow in the same beds year after year, with the addition of a little extra soil, and a dressing of manure. Watering "with rain water and without a rose," as Mr. Walker states, is simply placing difficulties in the way of growing Pansies easily. A customer, a clergyman in Derbyshire, has just written to acknowledge the receipt of some Pansies I sent him, and he says, "Will you give me a minute's time to tell me whether you keep your Pansies during the winter *under cover of any kind?* My stock, which my gardener keeps in a frame, looks pale and sickly; yours is healthy and vigorous."

In these northern districts we are obliged to winter them under glass, and this can be done with very little trouble. We take any dry garden frame, mount it on a brick or two at each corner, and fill it with coarse brick rubbish or ashes to within 10 inches of the glass. On this we place 3 or 4 inches of light soil, into which we plant in November, so that the plants are close to the glass; they are not allowed to be too wet, and are never covered with mats or any other material, no matter how severe the weather. We give plenty of air in fine weather, and just look after damp. In this way our losses are not ten plants in a thousand.

The beds for raising the plants in March or April should be turned up now and then during the winter, and a little fresh soil and manure added. I object to too much manure, and after planting we surface with cocoa refuse, or potting soil and leaf soil; and during the summer top-dress often, loosening the surface of the soil when hard, and pegging down the shoots. Slightly burying the base of the shoots induces them to throw out side shoots, which root and keep up a continuance of bloom. We water with a rose pot night and morning in hot weather; and if I require flowers for showing, we withhold rose-pot watering for two or three days before the exhibition, or protect the flowers.

So many are afraid of the Pansy, simply because they do not know how easy it is to grow it. I am surprised it is not more extensively used for beds and borders, for it blooms so early and continues so long; and who says it does not present a very gay appearance?

A word about sowing seed. The proper time to do this is from September until the end of October. We sow in frames prepared just as they are for the plants, and cover with a mat to prevent watering until the seeds are showing through. Then we remove the mat, and admit air.

Bradford Nursery, Shipley. WILLIAM DEAN.

LATE GRAPES.

YOUR correspondent, Mr. Hannan (p. 92), says the race for late keeping seems to be between Lady Downe's Seedling and Barbarossa [Gros Guillaume]. From the discussion which has been going on, it appears that almost every one has a favourite among the few late-keeping varieties so much run upon lately. I have been noting this subject for some time, and am perfectly convinced that soil and situation have a decided effect upon the good keeping and flavour of every one of them. I have not the least hesitation in pronouncing Lady Downe's to be a useless Grape for a late house. In certain soils it shrivels almost immediately after ripening, and at any time the flavour is poor, while under other circumstances it is good, but never equal, either in flavour or hanging properties, to Oldacre's West's St. Peter's, which for a general late Grape has been too much overlooked of late years, particularly as it has the merit of being one of the most free-bearing Grapes we know, and not particular as to soil—at least I have not seen one instance of its shrivelling up in a similar way to Lady Downe's. Under the most favourable circumstances, Barbarossa is like a bad Melon; it wants sugar eaten with it, besides being the most uncertain cropper I know. One party recommends for it the short-rod system; another has been successful in securing good bunches by long rods, or grafting. I have tried all, when it was so high in favour, and although we have secured six and seven-pound bunches, we never did secure a regular and good general crop, nor have I seen one elsewhere. F.

REMARKS ON CLIMBING PLANTS.

THERE are few subjects about which inquiries are more frequently made than that of the suitability of certain climbing plants to different houses, whether for embellishing back walls, pillars, or rafters, &c. A few remarks upon so popular a subject may, therefore, prove interesting to some of the many amateur and other readers of the FLORIST. Considering the great variety and the exceeding beauty to be found in plants of this class, their ready subserviency to the cultivator's wishes, and their adaptability for decorative display, it may be doubted whether we afford them that amount of care and studied attention, which they deserve.

There can be no doubt but that in all modern houses "climbing plants" or "creepers," as they are sometimes called, should be grown athwart the roof under the glass, so as to afford in themselves sufficient shading—a really natural shading—for all legitimate uses, and thus effectually to do away with the old canvas rollers. I say "modern houses," because others constructed upon more antiquated principles will have no properly drained and prepared border underneath them, into which the roots of such plants can work and ramify themselves, so as to acquire a proper degree of vigour to furnish the roof as effectively as they ought to do. In such a position, with the whole surface of the foliage revelling in the full sunlight, with its attendant heat and concomitant humidity, they bloom and grow freely and luxuriantly, far surpassing anything they are capable of accomplishing, when stived up under roofs, constantly shaded above from the sun, and with no properly prepared border for the roots below.

It may be well, for the purpose of distinctness, to class the plants to be dealt with under headings, as Stove Climbers, Conservatory or Greenhouse Climbers, and those which are fitted for an intermediate-house. Stove Climbing Plants, it may be needless to assert, are never able to put forth all their beauty, both of flower and foliage, in our variable climate, and during our short summer, without some aid in the form of artificial root-warmth; without which it would be impossible to imitate the conditions of their native soil, heated as it must be to a high temperature by bright unintermitted sunshine, and by showers of more than tepid warmth, driven into strata of rich maiden earth. Contrast this with the best of the sunken unheated borders of our exotic stoves, and the low range of temperature existing therein in the month of March, when climbers of this class are starting into active growth, and note if the conditions are not extremely adverse to their successful cultivation.

Allow me, then, to suggest a mode of treating strictly Tropical Climbers, by which they will be brought under a far more genial *regime*—a mode which will necessitate such arrangements in our stoves as will not fail to be appreciated by the other inmates thereof. I am not going to propound any new theory, or start anything original, for doubtless such arrangements as I am about to describe are met with already in some places. What I wish to suggest is, that large pits should be built within the area of all plant-stoves, precisely similar to those which are formed for the growth of Pines, but not such as to curtail the necessary space for pathways, or to discommode the pedestrian in any way. Hollow-sided brick walls, some 6 to 7 feet deep, make a good pit; the bottom of which, after a thorough drainage has been secured, should receive little less than a foot of old mortar rubbish, broken bricks, &c., made solid by being thoroughly and evenly rammed down. Upon this the soil suitable to the kinds of plants to be introduced, should be placed firmly, to the thickness of about 3 feet. A ridge of this same compost should be brought up to within a foot of the kerb surrounding the pit, at those points where creepers are to be planted. Always take care, however, to have a thickness of from 6 to 8 inches of soil between the fermenting material, and the principal mass of roots. The best heating material for such a purpose is tan. At the stage at which we have arrived the pit should be filled up with this material to something like a foot above the kerb; and this body of tan must be allowed to ferment until the maximum heat is reduced to 95°. Then will be the time to plant out the creepers into the prepared soil, and this we will suppose to be done in early spring; afterwards well water them in, and secure them to the most artistic trellis-work which suggests itself as suitable to the form and requirements of the house.

When it becomes necessary to renew the heat in this body of fermenting material (which with the mass I have recommended would not be absolutely needed until the following spring), it will only be necessary to remove the most decayed portion of the old tan nearest the top, and to add sufficient new tan to insure, by thorough admixture with the old, a similar heat to that recommended above. This heat should not be materially exceeded, as the roots buried below have to be kept in mind. Other materials, such as leaves or sweetened stable-litter, may be brought into use; but these attempting to produce a progeny that cannot fail, at all events, to have the characteristic of distinctness. It appears to be of evergreen habit, taking, in this respect, after Vallota purpurea, and of course must be treated accordingly. It possesses eminently a vigorous habit, and yields an abundance of fleshy roots, demanding nutriment. A good sandy loam, with a little leaf soil and a modicum of peat, answers well for root ramification. It is clearly a florist's flower, from the perfection of its form, its substance, and its other points of general excellence, and any one in a position to grow it should look upon his collection, however limited or however choice, as being incomplete without it. A warm greenhouse temperature suits it admirably; stove heat will weaken its constitution, and even half destroy it.

Meadowbank. J. ANDERSON.

THE CULTIVATION OF THE CARNATION AND PICOTEE.

BY this time the plants treated as stated at p. 68, will have begun to throw up their stems for blooming, and for the next two months will require diligent care to ensure a fine bloom. Do not allow more than one spindle from the same plant. The laterals ought to be cut off as soon as they appear, and the main stem, as it rises, must be gently tied to the stick, till it has attained nearly its full height. Bast matting I consider the best material for tying. Most sorts, before the stem has attained its full height, begin to divide at the crown into smaller shoots for lateral buds, all of which but one besides the main crown bud, ought to be cut out, especially when the flowers are required for exhibiting. Where this is not the case, three or more buds may be left, in order to prolong the bloom, but to attempt to get more than two good full-sized flowers from one plant, will be useless.

By the second week in July, in the southern parts of England, the buds will begin to show colour; in the northern parts they are generally a fortnight later. In either case, as soon as the buds open sufficiently to show, whether in true colour or run, the operation of layering or piping, or both, may be performed. The larger grass ought to be layered, but the small is best piped, especially in the case of Picotees, as it is a known fact, proved by myself and other growers, that the best and cleanest flowers are got from plants struck from pipings. The piping ought to be completed by the middle of July, but whether piped or layered, all ought to be done by the end of July. A moderate quantity of fine sand mixed with the soil when layering, will be found to help the plants to strike.

If the layering and piping are done in proper time, as stated above, the plants will be sufficiently rooted for taking off by the middle of September. When taken off, they ought to be planted in pairs in 80-sized pots, placed in a cold frame with closed lights for a week or so, and then, the lights being taken off, given a good drenching with rain or soft water, having a fine rose on the watering pot. Let the water get thoroughly dried off the grass or foliage; put on the lights at night, so as just to keep off the slight frosts that may occur, till the plants have got well established in their pots, after which they will be hardier and better if exposed in all dry weather, covering only in damp or rainy periods, till near midwinter, when they will require a little more protection at night, besides being kept moderately dry up to the end of February or the beginning of March.

Huddersfield. J. HEPWORTH.

THE CULTURE OF EPIPHYLLUM TRUNCATUM.

WHEN well grown, this plant is one of the most showy decorative of the stove plants which flower in the dreary months of November and December. I had a collection of different varieties in flower here, and most beautiful objects they were, mixed with other plants in a warm greenhouse. They range about 8 feet in height and with the exception of about 6 inches at the top, they are a complete mass of flowers to the bottom of the pot. The young plants were procured from the Messrs. Lee, of Hammersmith, who obtained, I believe, some of the varieties from the Continent. I am not aware what stocks or stock they have been grafted or inarched on, but they seem to grow vigorously. The following varieties are the best and most distinct in colours that have flowered here—namely:—*elegans*, *magnificum*, *Russellianum*, *superbum*, *truncatum violaceum*, and *Ruckerianum*.

My collection has been managed so as to keep the plants rather dry after they have done flowering, and not to excite them to grow before June or July. At that period they are repotted, the old balls being well reduced. The soil used is richer than what is generally given to succulent plants—namely, some well-rotted deer dung, mixed with broken lime rubbish, and light sandy loam. They are then kept in a warm moist stove to make their young growths, and generally flower about the middle of November.

Welbeck. WILLIAM TILLERY.

NOVELTIES, &c., AT FLOWER SHOWS.

AT the meeting of the Floral Committee on the 4th of April, Mr. Turner produced two groups of *Auriculas*, one of show, the other of Alpine varieties. With but two exceptions, the former consisted of kinds already in commerce. One of these was *Competitor*, a green-edged flower, with very large and bold pips; the other *Colonel Champneys*, a fine grey-edged variety, shown by Mr. Turner last year (see plate). Both were awarded second-class certificates. The Alpine varieties represented the fine strain Mr. Turner has produced within the last two or three years, the gay and striking colours of which quite place in the shade the more sober hues of what are known as the show kinds, while the very best of the self flowers, bristling with points of quality in such a degree as to be near perfection, cannot stand by the side of one of these bright-looking Alpine flowers when regarded as decorative plants. First-class certificates were given to *King of Crimsons*, of a glowing ruby-crimson ground colour and superb yellow paste, and to *Princess*, purplish violet ground, edged with dark and smooth creamy white paste, a bold and handsome flower. A second-class certificate was given to *Jessie*, dark velvety crimson ground, margined with purple, and smooth pale yellow paste. *Minnie*, *Admiration*, *Sovereign*, *Dazzle*, *Brilliant*, *Meteor*, and *Seraph* were also fine new flowers of considerable merit.

Messrs. F. & A. Smith exhibited some new Cinerarias of the second year, and also a large number of yearling flowers, most of which were very good. Of the former, *Pandora*, a good-sized flower, having a broad margin of rosy purple, and a white ground round a pale disk, received a second-class certificate. *Circe* had a broad edge of violet-rose, white ground, and pale disk, the outline of the flower good, but the petals irregularly placed round the disk. The others do not call for special notice.

Messrs. Downie Laird & Laing had a small plant of a very promising Gold and Bronze Zonal *Pelargonium*, named *Mrs. Maynard*, the leaf ground pale gold, with well-defined reddish bronze zone.

The Show at South Kensington on the 18th ult. yielded in addition to some fine new Roses, alluded to elsewhere, a very beautiful temperate conservatory plant, the *Lasiandra macrantha*, a melastomad, with the usual ribbed leaves of moderate size, and flowers of the colour of those of Pleroma elegans, but about three times as large.

There were also some interesting novelties at the Floral Meeting on the 21st. ult. Mr. Parsons, of Welwyn, sent a fine purple *Azalea*, *Magenta Queen*, a rosy flower, with a distinct purple tinge, and of fine shape and substance. Messrs. Rollisson & Sons, of Tooting, sent *Rhododendron fragrantissimum*, apparently a cross between Edgworthii and ciliatum, a fine rosy-tinged white flower of fine form and deliciously fragrant; with it were *Saccolabium ampullaceum moulmeinense*, a grand variety with deep rosy red flowers; and *Juniperus excelsa stricta*, a handsome pyramidal-growing and perfectly hardy Conifer. Messrs. Veitch & Sons sent the double blue Japanese *Clematis*, called *John Gould Veitch*, which is a blue-flowered C. Fortunei; and *Echeveria agavoides*, a neat-growing dwarf distinct form of this interesting genus. Mr. Williams showed young plants of *Cibotium spectabile* and *C. regale*, two fine tree Ferns from Mexico; and Mr. Bull had a larger plant of the last-named species. Mr. Williams also showed *Ence-*

phalartos Ghellinckii, an erect-habited Cycad, with woolly pinnate fronds, and very narrow pinnæ. This plant was introduced from S. Africa by Mr. Bull, and first named *E. gracilis*, the name Ghellinckii having been given to it in Belgium. Mr. Day exhibited a pretty form of *Saccolabium curvifolium*, named *luteum*, with deep orange yellow flowers. Finally, Mr. Marshall produced a plant of *Oncidium Marshallianum*, the finest Oncid in cultivation, bearing brilliant yellow flowers, with a lip 2 inches across, and having the petals and sepals spotted with brown; the symmetrical arrangement of the parts of the flower, and of the flowers on the spike, adds much to the interest and beauty of this fine species. Mr. Marshall also exhibited a fine example of *Oncidium serratum*, in which the cinnamon-coloured flowers were prettily bordered with yellow, the colouring, together with the singular structure of the flowers, rendering them most attractive. This Oncid is that called *O. diadema* by Mr. Linden. R. D.

MONTHLY CHRONICLE.

AMONGST the novelties at the Ghent Show, Messrs. Veitch & Sons showed, with many others, *Pandanus Veitchii*, a handsome broad-leaved stove plant, with white-edged curving leaves; several *Dracænas*, as *reginæ* and *Moorei; Denisoni*, a bronzy, metallic, smooth-leaved sort; *Chelsoni*, with arching leaves of a bronzy tint, distinctly margined with red towards the base; and a species from the South Sea Islands, similar to nobilis in habit, but of a darker colour; several *Crotons*, such as *tricolor* with broad leaves, with gold centre and red footstalk; and *aucubæfolia*, with spotted leaves. M. Linden showed *Lasiandra macrantha*, with very large purple flowers; an *Iresine* from Ecuador, with lanceolate ovate blood red leaves, having a bright red midrib; *Maranta virginalis* and *virginalis major*, two forms of great beauty, having orbicular oblong leaves, with a silvery central bar and silvery zone, but differing in size; and a good plant of the new Commelynad *Cochliostema Jacobianum*. MM. Jacob-Makoy et Cie. sent *Panicum plicatum foliis niveo-vittatis*, a stout Grass with white central and marginal stripes. M. A. Verschaffelt had *Cordyline Guilfoylei*, one of the best new plants shown, an Australian shrub, with the leaves diagonally striped with yellow, becoming here and there red with age; also *Dieffenbachia princeps*, with very large leaves, oblong, with cordate base, dark green, having here and there a bright green spot, a very distinct plant; *Dieffenbachia mirabilis*, in the way of Weirii, but larger-growing; and *Dieffenbachia decora*, spotted in the way of Weirii, but with silvery blotchings superadded, the latter a very distinct and effective plant. He had also *Passiflora trifasciata*, a rather good-looking creeper, with trilobed dark green leaves, having down the centre of each lobe a mottled red centre; *Aristolochia insignis*, with small leaves mottled with white; *Dioscorea egregia*, having the leaves unequally blotched with various shades of green; and *Dioscorea nobilis*, with dark bronze velvety cordate leaves, having a central band of yellow, the rest of the leaf being slightly marked in patches with golden dots.

—— AN excellent new fumigator has just been submitted to us for trial. It is worked by revolving fans, but, unlike others, the hopper is fixed on the end of the nozzle, so that clogging is impossible, and consequently this source of annoyance is avoided. The fire is placed in the hopper, below the tobacco, and by gentle revolutions of the fans a large volume of smoke, equal in capacity to the diameter of the hopper, is sent into the house. It must be obvious that an aperture of 6 inches diameter, vomiting forth a dense volume of smoke, must more rapidly fill the house than an aperture of, at the most, one-third the diameter. Practically we found it to be most efficient, the usual care being requisite to use the tobacco or tobacco paper properly·

prepared and damped, and to prevent the smouldering fire from breaking out into a flame. It was sent to us by Mr. W. Dean, and is the best fumigator which has yet been invented.

—— Of the Rose Marechal Niel, there is now in bloom in the Rose-house of Barclay Field, Esq., at Ashurst, in Kent, a plant with fifty magnificent blooms. It was planted as a young standard two years ago.

——Mr. Wallace, of Colchester, the successful prize essayist of the Oak-feeding Japan Silkworm, gives the following directions for its treatment. The eggs are to be kept in a cool dry well-aired place, at a temperature between 40° and 50°, till the Oak trees break into leaf in spring. Then they are to be subjected to a temperature of 60°, exposed freely to light and fresh air, washed well with water to moisten the shell, and after a few days exposed to a temperature of 70°. When hatched, remove the worms, with a moist camel's hair brush, to their food, which must be fresh and moist; admit air freely, but shade from sunshine. They will feed on the English, Turkey, and other kinds of Oak.

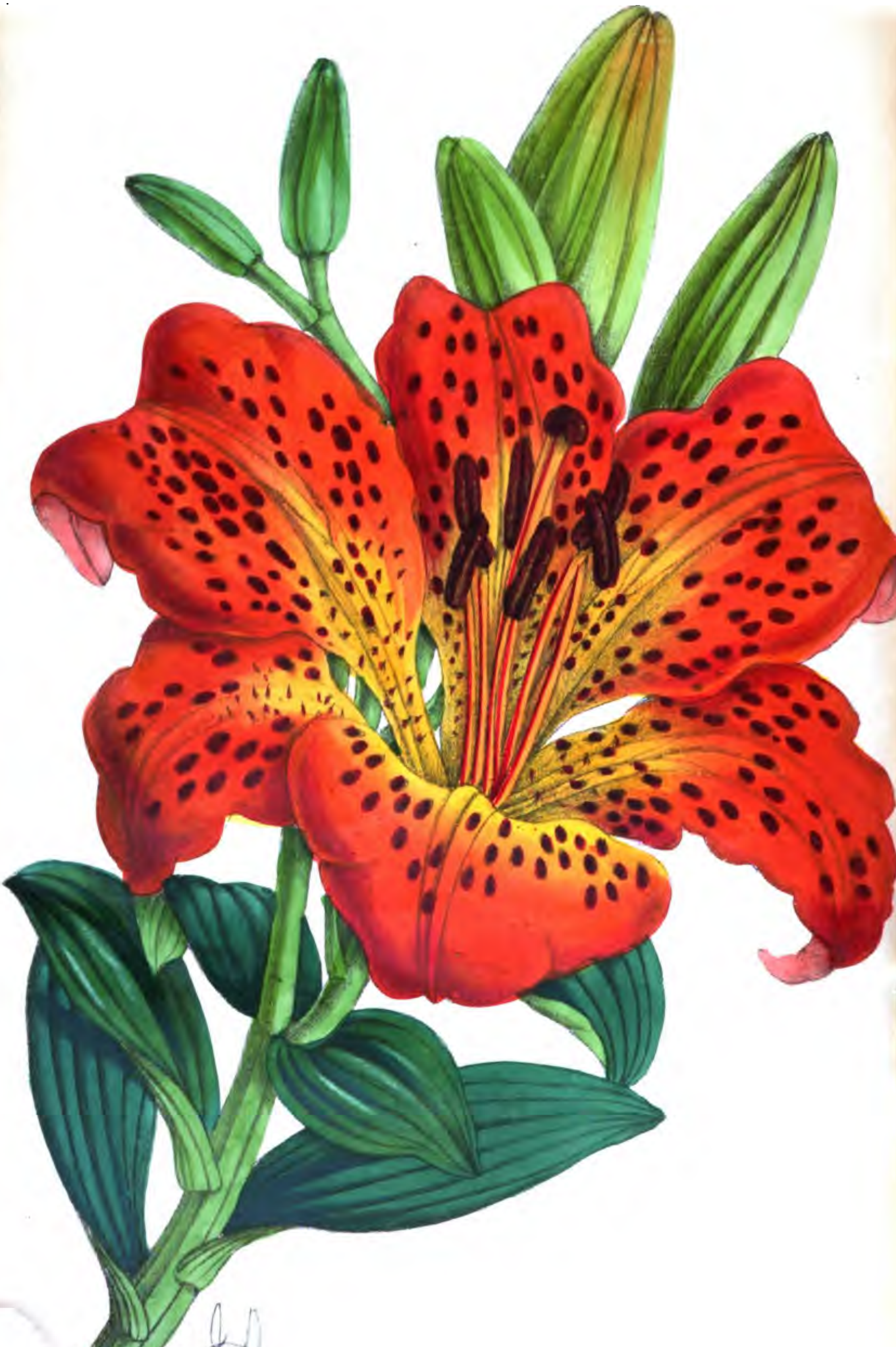
—— At the grand International Horticultural Exhibition, opened at Ghent on the 29th of March, alluded to above, the Palms, Cycads, Tree Ferns, Azaleas, Camellias, Agaves, and Amaryllids, were the main features of a very brilliant display. We are pleased to find that our countrymen have been complimented in the person of Mr. Harry Veitch, who was specially sent for by the King, to point out the novelties exhibited by his firm, to which exhibition was awarded the Queen's gold medal, offered to foreigners, for the most important contribution by them to the Exhibition.

—— The Climbing Devoniensis Rose has been strongly recommended for a wall having a southern or eastern aspect. A plant obtained three years ago by "S. R. H.," made shoots the first summer 10 feet in length, covers an area of wall 6 feet in width by 15 feet in height, and would soon occupy double the space in breadth, if permitted. Last year the first flowers opened in June, quite as large and as beautiful as the lovely parent flower; it continued in beauty through the summer, and yielded perfect blooms late in November, when there were still several buds on the tree. Since the introduction of Gloire de Dijon, we have, perhaps, had no Rose of so much merit, the flowers being abundant and sweet, and the plant perfectly hardy.

—— Though of doubtful merit as an out-door plant, *Iresine Herbstii* forms a really attractive specimen plant for in-door culture. Grown in this way the rich colouring of the foliage comes out vividly and distinctly. At Cliveden, as a furnishing plant for baskets suspended in a conservatory, it has proved very handsome, the sunlight streaming down through it, bringing out its peculiar hues in a distinct and striking manner.

—— The next exhibition of the National Tulip Society is appointed to take place in the Manchester Botanical Gardens, in conjunction with the Great National Horticultural Exhibition, on the 29th of May.

—— We are glad to find that Her Majesty the Queen, who paid a special visit to the Royal Horticultural Garden during Mr. W. Paul's exhibition, was pleased to express herself as being highly gratified therewith, and requested that Mr. Paul's works on horticulture might all be sent for her perusal.



Lilium Thunbergianum pictum.

LILIUM THUNBERGIANUM PARDINUM.

WITH AN ILLUSTRATION.

THE bulb of this beautiful Lily was purchased by G. F. Wilson, Esq., of Gishurt Cottage, Weybridge, at a sale of Japanese bulbs, and formed part of a mixed lot, comprising L. tigrinum and L. auratum. It is very distinct from all the Japanese Lilies known in England, and appears to be nearly related to L. Thunbergianum, though it differs somewhat from that species in its narrower leaves, and in the warty instead of glabrous surface of the base of the petals. The colours are also distinct, the centre of the petals being stained with golden yellow, and the whole surface being dotted over, as in the Tiger Lily, with dark spots. It is one of the most beautiful hardy Lilies we have seen. It has the general habit and aspect of L. bulbiferum, but differs in the flowers being quite smooth on the outer surface, and in the colour and markings. We suspect it may be a hybrid, in which case it might bear the name of L. PARDINUM.

We learn from Mr. Wilson that the plant grows about a yard in height. It has a stoutish stem, which is furnished with smooth lanceolate acute leaves, these being nearly an inch broad and 4 inches long, with about three principal ribs on each side the central one, and several smaller ones lying between them. The flowers are each about 5 inches across when expanded, and are arranged in a terminal umbel, containing several flowers, the pedicels of which are branched so as to give three successions of buds, and furnished at each ramification with an ovate acuminate bract. The segments of the perianth are so far narrowed towards the base as to leave distinct openings at the base of the flower; they spread out into a shallow vase-like form, with the apices incurved; the sepaline ones are about 1¼ inch broad and nearly 4 inches long, the petaline fully 2 inches broad, and the stamens about 3 inches long. Each segment has two raised ridges running throughout its length, forming between them a deep sharp furrow, the lower portion of which is closed and distinctly bearded with short hyaline interwoven hairs. Several other indistinct ridges appear near the base of the segments, but these break up more or less into prominent warts, some of which are tipped by a black spot, and others by a stellate tuft of hairs. The filaments and style are orange red.

The ground colour of the flower is of a reddish orange colour, the central portion of each segment being of a golden yellow, and the whole surface nearly to the edge marked over with dark-coloured dots similar to those of the Tiger Lily. The flower indeed may be described as having the general form and character of L. bulbiferum, the colour and spotting of tigrinum, and the golden band of auratum. M.

ROOT-CULTURE OF FRUIT TREES.

HAVING read Mr. Fish's remarks on my system of fruit-tree planting (p. 107), I beg to say that its description was not meant as a challenge to him. I said, gardeners differ in their opinions. My experience is all in favour of deep borders, deep trenching, and deep soil for all garden crops. It may be called deep planting if you will, but my whole aim is to prepare a deep bed of good soil to plant the trees on. Mr. Fish asks, Why not put the roots deep at once? I answer, That is not Nature's way, nor is it practical. A foot is depth enough for a young tree; its roots will go down if not drawn to the top by mulching. Next as to the warm soil, I have often dug around trees when the soil has been frozen 14 inches deep: now all below that must be warmer in winter. There is none of Nature's covering of leaves on wall-tree borders, or in orchards; the leaves are all raked away, and the ground is often cropped with winter salads, vegetables, &c., or dug roughly for the winter. In summer all is in crop again, and there is no chance for mulching.

Every element of nature is against fruit trees planted on shallow soils, or with their roots on the surface. They are starved by drought in summer, starved by cold in winter, blown about by every wind, and often laid prostrate on the ground, unless held up by some clumsy support such as we too often see. Now put a deep bed of soil, prepared as I have recommended, and the trees will be their own protectors, and will give lasting satisfaction.

Sudbrooke Holme. GEORGE McBEY.

I AM glad that Mr. Fish has called some attention to the roots of fruit trees. During a short tour last autumn I had an opportunity of visiting several gardens, some of them entirely new, and I was surprised to see how little attention had been given to the walls and wall-borders; no doubt the border had been trenched with the other part of the ground, but it would appear that as the trees would occupy the whole of the wall, they must be content with the lower stratum of the border, for all the surface was cropped with one thing or another.

It has been said that the vegetable department of the garden receives less attention than that of fruit or flowers, but I am not sure about the truth of this. I am inclined to think that out-of-door fruits have received comparatively but little attention. In the cultivation of our most common vegetables, any good cultivator will trench deep, and study the manure best adapted to the crop, but too generally fruit trees are planted, and then left to get whatever the land will afford them. But this is not all: the surface-cropping is the greatest evil, and this must be condemned by all good cultivators. I therefore maintain that to build walls for fruit trees, and to crop the borders with vegetables, is a great waste of money, and results in a continued disappointment to the cultivator.

The following is what I consider essential in the cultivation of wall fruits. For a 10 or 12-feet wall, a border formed of good turfy loam 6 feet wide and 2 feet deep, and, if the subsoil should be at all wet, with a rubble bottom. Brick rubble, with 2 or 3 inches of coal ashes on the top to prevent the compost mixing with it, forms the best drainage. The border should be left entirely to the trees. Top-dressings of decomposed leaves, old hotbed manure, and fresh turfy loam should be added whenever it is thought necessary; mulching and watering, if required, must be attended to during hot dry weather, and lastly, a good canvas screen should be used to ward off spring frosts.

When forming a new garden in 1861, I had the border marked out 15 feet wide. Of this, 6 feet next to the wall was formed entirely of new turf cut from the site of the new garden; the remaining 9 feet was cropped with dwarf-growing vegetables. This was the best arrangement I ever adopted. Of course the roots were intended to be kept to the 6-feet border by pruning, but this I did not carry out, as I left them to other hands in 1863. Should I ever have to form another garden, I think I should enclose the roots with a 4½-inch brick wall, or perhaps still better by moveable slates. In removing a tree at any time, it would be only necessary to take out a trench in the border immediately opposite to it, and remove the slates, when the tree could be taken out with the greatest facility, and without any injury to the roots.

Oakley Park, Suffolk. W. ROBINS.

PINE-GROWING: QUICK RETURNS.

IN a communication published in the FLORIST AND POMOLOGIST (p. 53), on the cutting-down of Pine plants which miss fruiting, reference was made to a system of ripening fruit in sixteen months after the suckers were taken from the parent plants in the ordinary way. From another season's practice I am now convinced that ripe fruit can be produced within the twelvemonth from the time the suckers are detached from the old stools.

In the latter part of August, 1867, a quantity of Queen suckers were potted immediately the fruit on the parent plants was ripe, and in October were shifted into their fruiting pots, and pushed gently on in a bed of tan and leaves all winter. In March they were subjected to increased top and bottom heat, and the result is that every one of them is now showing fruit. More than this, they are by far the finest "shows" on the place, coming up red and broad, with strong short stems, as if they would rend the whole plant asunder. These will be quite ripe within the twelve months, and I have no hesitation in affirming that this can be carried out, as a rule, provided the young plants are grown on in as much light as possible, and not on the heavy-watering system, which ruins more Pine plants, by rendering them unfruitful, than all other causes put together.

Archerfield. D. Thomson.

DIPLADENIA CRASSINODA.

THIS fine creeper is worthy of a place in every collection of stove plants, however limited, as a well grown specimen will produce a succession of its beautiful deep rose-coloured blossoms for several months.

To begin with a young healthy plant—say in a 60-size pot; shift it at once into a 32, using good fibrous peat broken up into pieces varying from the size of a hazel nut to that of a walnut; this should form nine-tenths of the compost, the other part to be good yellow loam well pulverised by rubbing between the hands; mix them well together, and then add a liberal quantity of sharp silver sand, sufficient to cause the water to pass freely through when watering is performed. The large tuberous roots of Dipladenia are most impatient of stagnant water, therefore let the drainage be ample; one-fourth of the depth of the pot, of whatever size, should be filled with broken crocks, over which is to be placed a layer of rough fibrous peat to keep the drainage from becoming choked and inefficient. Pot moderately firm, and place the plant in a temperature ranging from 60° to 70°; be careful in watering, and as the season advances, the temperature may be increased in proportion to increase of light—to 80° or 85° by solar heat. This of course can be regulated by ventilation, as in case the temperature should rise above this point more air should be admitted. Use shading as little as possible, in fact, it is best dispensed with entirely, unless so far as is absolutely necessary to prevent the young foliage from becoming scorched by the rays of the sun through the glass. Syringe morning and evening, and sprinkle the floor of the house near to the plant two or three times during the day, as the Dipladenia delights in a warm moist atmosphere. When the plant has taken to the shift, give liquid manure water once a week; and as soon as the roots have made their way to the sides of the pot, shift into one two sizes larger, using the same kind of compost for potting as before, and treat as previously recommended.

The plant should now make rapid progress, and by the end of July will probably require another shift, which should be but to one size larger than the pot it is taken from. Due attention must be paid to tying the young shoots as they continue to grow, either to stakes or trellis, but at all times allow 10 or 12 inches of the extremities of the shoots to have full liberty, as by tying them in when so tender they are apt to get injured in the operation, and they also grow more freely when not too closely tied in. It will now probably show a few flower buds, but a fine display of bloom must not be expected until the following year. During the month of October water must be gradually withheld until the soil in the pot becomes quite dry. In this state the plant should be wintered in an ordinary stove temperature until the middle of the following February, when it should be carefully turned out, and the ball reduced as much as can be done without injury to the roots; re-pot in the same sized pot, place it in a temperature of from 60° to 70°, cut out all dead shoots, syringe lightly to induce it to break freely, and be careful not to overwater until the plant shows signs of activity, when it should be treated in every respect as above recommended.

Dipladenia splendens and most of the other varieties of *Dipladenia* succeed well under the above treatment. Cuttings of the half-ripened wood of *D. crassinoda* will root freely under a bell-glass, and thereby a stock of plants may be kept up; this, indeed, should be done, as old plants are very liable to die after they are three or four years old.

Somerley Gardens. HENRY CHILMAN.

PINUS PATULA.

ONE of the Mexican Pines, and a most graceful and distinct species. Its wood is of a peculiar lead colour. The foliage is from 8 to 9 inches in length, and grows in threes, very delicate and most graceful, of a fine silver-grey colour, hanging perpendicularly or pendulous on either or on both sides of its delicate branches, like the hair neatly parted on a young lady's head. The tree is handsome at all seasons, but it lights up in the most glorious manner with a gleam of sun and waft of wind.

There is a fine tree of this species growing here, which has borne cones for years past. I send you a small branch with its foliage, which will give you a fair idea of its beautiful habit and appearance.

Bicton Gardens. JAMES BARNES.

AMARYLLIS RETICULATA.

WERE this handsome Amaryllid, which was once called *Coburghia striatifolia*, sufficiently known or appreciated, it would be seen more frequently in plant catalogues and general collections. The foliage is peculiar and pleasing, from the narrow ivory-white stripe along the midrib of every leaf, young and old. The leaves are ensiform, blunt, slightly concave, and of fine texture, quite equal to those of the *Imantophyllum.* The flowers, six in number, each measuring about 3 inches across, rise well above the leaves, and are placed in a horizontal position on the apex of a stout stem, forming a handsome umbel, 10 inches or a foot in diameter. The colour is delicate, a marbled pink and white, increasing in brightness with age.

The plant is exceedingly hardy as a stove plant, and rapidly propagates itself by offsets. Its cultivation is of the simplest description. A soil of turfy loam with a good proportion of sand seems to suit it admirably; and as to position, a shady corner in the greenhouse for the three warm months of summer and a cool stove for the remainder of the year, fully meet its requirements. The plant from which the above description is taken, is in the possession of Joseph Pease, Esq., of Darlington. It commenced blooming towards the end of December, and continued in full vigour of bloom for about three weeks in a cool Orchid house.

Southend, Darlington. JOHN RICHARDSON.

TRELLISED FRUIT WALLS.

I LATELY heard a discussion on the alleged advantage of wall trees being fastened to a trellis instead of being nailed to a wall. It was argued against nailing to the wall, that the side of the fruit next the wall did not ripen like that exposed to the sun. Such may be the case in bad seasons, especially with Apricots, but the case may be worse with those on a trellis, on which the trees are not only deprived of the reflected heat by the draught of air between the trellis and the wall, but also the warmth from the wall during the night; besides, the shade by either plan would be nearly alike, and the ripening of the crop depends more on the action of the sun upon the leaves, than upon its hot rays impinging on the fruit. The ripest fruit may be found under the leaves, in consequence of its having, according to their health, had more nutriment from them modified by the rays of light. The unequal ripening of fruits depends more on how the stalk ends are situated, which in general being next the wall or close upon the shoot; and the sap vessels in those parts of the fruit through which the juices flow to nourish it, are the last to ripen or decay. Although this may be little thought of, it is nevertheless true; and the same may apply to all kinds of fruit, the good qualities of which depend much on the health of the leaves, as just noticed. Therefore, the too-common plan of picking off the leaves to "let the sun to the fruit" should be done with great caution. If possible, none of the fruit-bearing shoots should be deprived of their leaves, otherwise, for want of proper nourishment, the exposed parts of the fruit may be scorched or ripened prematurely by hot sunshine. This may be the principal cause of fruit ripening on one side, and remaining green on the other.

Connected with this subject, I may mention that the ripening of all kinds of fruit is only the beginning of decay in the pulpy matter which protects or matures their seed. In general this is situated in the heart of the fruit, but in other cases, as in the Strawberry, on the outside. Moreover, however pleasing to the eye or taste cultivated fruits may be, they are only monstrosities from their original species—the Apple a puffed-up crab, and the Peach a swollen Almond. Consequently seedlings, the offspring of these monsters, are often more like the original stocks than like the cultivated parent. As an instance, I once raised some seedling Pears, from seed of the best new kinds, and only two of them have produced fruit worth notice; the rest are of rank growth, as full of spines as if they had been reared from seeds of wild Pears, and only fit for grafting upon.

Cossey Park. J. WIGHTON.

SELECT PINKS.

WE are indebted to Mr. Turner, of Slough, for the following useful descriptive list of some of the best varieties of the Pink, cultivated in the collections of the present day:—

Attraction (Hooper).—Dark red lacing; large, moderately full, and very constant.

Bertram (Turner).—Very broad bright red lacing; large, full, and very fine.

Blondin (Turner).—Very dark lacing; very fine, and distinct.

Bridesmaid (Turner).—Purple lacing; very smooth, and fine.

Beauty of Bath (Hooper).—Rosy purple lacing; fine, large, and good.

Charles Waterton (Kirtland).—Bright red lacing; medium size, very constant, and profuse bloomer.

Delicata (Turner).—Lilac lacing; very smooth, large, full flower, very fine.

Device (Turner).—Bright purple lacing, large, and very fine.

Elcho (Turner).—Reddish purple lacing; a fine, large, full flower.

Emily (Battersby).—Very dark lacing; medium size, very fine, and distinct.

Invincible (Kirtland).—Dark purple lacing; fine, and quite distinct.

Lord Herbert (Turner).—Rosy red lacing; fine broad smooth petals, large, and full, without the least confusion.

Marion (Turner).—Rosy red lacing; very smooth, evenly laced, full size, and very fine.

Picturata (Turner).—Lilac lacing; full size, and very distinct.

President (Turner).—Dark red lacing; large, full, and very fine.

Rev. George Jeans (Kirtland).—Rich dark lacing; very large, full flower, fine smooth petal, very constant, and distinct.

Scarlet Gem (Maclean).—Very brilliant colour, remarkably showy, and distinct.

Victory (Hooper).—Rosy purple lacing; medium size, and very fine.

THE JUDGES AT OUR FLOWER SHOWS.

THE Council of the Royal Horticultural Society has recently invited the exhibitors to meet them "to discuss the question of the appointment of judges at the Society's Shows." This is wise as well as courteous, and much good may come of it. Exhibitors are entitled to be heard on this question, and the example set from this high source should exercise a wide and beneficial influence on other societies. Full, free, and open discussion should result in bringing out the collective wisdom of a body of thinking and working men, which cannot be otherwise than valuable for future guidance. Those who are most sincerely anxious for what is right have the most reason to wish the subject brought out into and discussed under, the full broad light of day. Those who are most deeply versed in this question know well that not only the success of our exhibitions, but our future progress in horticulture, depends much on the judicious selection of the judges. Is it not hard, cruel, crushing, for the fruits of a year's labour to be sacrificed at the shrine of indifference, stupidity, or incapacity? Flower shows are now becoming as "plentiful as blackberries," and the question is one that affects not merely this or that society, but all societies.

The first point that suggests itself to our mind is, "By whom should the judges be appointed?" By the exhibitors? Certainly not. We should not fear the issue of any civil suit in which we might be engaged if we were allowed to elect the jury. Not that we need necessarily choose dishonest men, but we should naturally choose men who conscientiously held views and opinions similar to our own. The choosing of the judges by the exhibitors is open to this further objection: a combination of exhibitors, supposing it to represent only a small majority, either in influence or in numbers, would work unfairly towards, and to the manifest disadvantage of all outsiders. But again. Should the judges be chosen by any officer of the Society? No. Because however shrewd, however impartial such officer might be, an individual will is more easily influenced from without, than the collective opinion of a committee or a council. The judges should be appointed by the governing body of the Society, not ostensibly but really, the latter being open to receive suggestions from subscribers, officers, exhibitors, and others, but exercising their own free and independent judgment in the matter.

Consistent with this view we venture to suggest that the judges should be chiefly practical men, honest, capable, of sound judgment, and possessed of good reasoning powers. Their names should be published in advance, perhaps attached to the prize-schedules. With subjects impinging on matters of taste a man of cultivated taste should be introduced as an adjunct to the necessary horticultural knowledge. Here, above everywhere, the wordy, pretentious man, in whose favour are recorded no honestly-acquired marks of "deeds done"—the shallow "sham"—should be ostracized. The judges should also be men who are not trammelled by the traditions of the past, or too enamoured of the present, *or there will be no improvement in the exhibitions*. We want practical men, but men with sufficient originality and force of thought to have formed an ideal of their own, and who are bold enough to recognise and encourage every advance towards it. To this we look for improvement. We want also men of the Cato stamp, of whom it has been said, that they "do right not for appearance sake, but because it is not in their nature to do wrong."

While venturing these remarks it would however be disingenuous to attempt to conceal the fact that the question is surrounded with more than usual difficulty. Such men as we describe are few and far between. Opinions vary in matters horticultural, as well as in other departments of art and science, and to borrow the phraseology of another keenly contested field, it is not every first prize that is "won in a canter." Half a length, half a head, a dead heat is now not infrequent, and such nice points, although clear to the judges, are not so easily made apparent to owners and bystanders. Why not to owners? Because they have been accustomed daily, perhaps hourly, to dwell on the beauties and defects of their own plants, endeavouring to develope the former and to extinguish the latter until, *to their own appreciation, at least*, they have pretty fairly succeeded in this effort. When an exhibitor weighs his own plants against those of a competitor, the difference is that of a hasty opinion formed of a company at first sight and that of an opinion founded on thorough knowledge of character. True, the latter taken singly is likely to prove the more correct estimate, but then the thorough knowledge of the one cannot fairly be set in comparison with the first impressions of the other. Why not to bystanders? We confess that we have little faith in the opinion of bystanders when weighed against that of properly qualified judges. In the first place such opinions are often inconsiderately given—given without full and painstaking investigation—given on some one prominent point rather than on a summing-up and judicious balancing of all points. Then again, the mere bystander, if he has the will, has not the clear field and opportunity for investigation, and probably not the special training—be it practical or be it artistic—that the properly qualified judge has or ought to have.

We sincerely believe, then, that however honest the judges, and however just their awards may be, general satisfaction to exhibitors is, from the nature of things, a point wholly unattainable, although there is no reason why the utmost efforts should not be made to secure the best possible judges, and the greatest possible realisation of justice. Even then, *especially when the competing collections are nearly equal*, each exhibitor will think his own the best, and the defeated will be disappointed and dissatisfied. The plan of giving equal prizes where collections are only "nearly" equal would not remedy, but increase the dissatisfaction, and would, in addition, be perpetrating a manifest injustice.

One word to exhibitors. On this point we would speak tenderly, for we know by experience the momentary mortification of defeat, especially when, as we are free to admit, has been the case with ourselves, we have been under the impression that our contributions have not been justly appreciated. In the olden times we remember to have seen defeated candidates pull off their coats and assume a boxing attitude, probably under the conviction that if not mentally vigorous, they were at least physically strong, showing a determination to assert their supremacy *in some shape or other*, and relying on their superior knowledge of the "noble art" of self-defence. Happily this highly demonstrative era has passed away, but there remains a mean use of the tongue, which is apparently dictated by a more ignoble spirit. Defeated candidates, learn to bear your reverses manfully! Cases of truckling or dishonesty in the judges at our exhibitions are, we are confident, scarcely existent—rarer even than black swans. During the past thirty years we have visited, judged, exhibited, at hundreds of flower shows, and while we must confess to have seen many awards contrary to our fallible judgment, we never saw but one case of truckling and dishonesty.

In these few remarks we have endeavoured to place our principal thoughts on this subject fairly before the reader. We have, for want of space, passed by many minor points, which we can readily conceive would have more or less weight with different minds, but these, should it appear necessary, can be brought up in the future. P.

ON PANSIES.

I AM much gratified to find that my remarks on Pansies have stirred up the Pansy fanciers, and may lead to beneficial results. Our Scotch friend "H. J." lays down his ideas clearly, and in a clear gentlemanly tone, but I regret that Mr. Dean's remarks are less courteous: At the onset he complains that I am "a little at sea," but if any one who understands Pansies will read both articles, he will discover that my friend is a long way out of soundings.

For the benefit of the public I will endeavour to point out the objections to Mr. Dean's theory. While he complains that I am placing difficulties in the way of "growing Pansies easily," he himself is setting up still greater difficulties, such as would deter any one from ever attempting their culture. The routine laid down is quite unsuitable; for instance, he says, "We water night and morning in hot weather." Did the idea never suggest itself, that such a system would only induce the roots of the plants to come to the surface, and so prevent their working in a natural way? The parching rays of a summer's sun acting upon the roots, produce the most fatal consequences in the culture of the Pansy. I have cultivated this flower now for about thirty years, and surely know that fancies and the older varieties would never do to be shown together, nor did I hint such a thing.

The complicated system of "growing Pansies easily," which has been recommended, will certainly take parties by surprise. Some of my friends wonder what altitude the beds will reach after twenty or thirty years' accumulations of extra soil and manure; others ask how the Pansy fanciers around Manchester and other places who have to be at their employment, perhaps two or three miles off, by 6 A.M., can follow out the system; while others, again, are surprised to find that they have given "no trouble during the winter," for most fanciers know that they do require a little care, particularly where they are grown by the thousand.

The interest attaching to the raising of seedlings must be my excuse for observing that the seed may be sown in March, or early in April in the open border, and the plants will bloom in July and August and onwards through the autumn. They should be looked over frequently when in bloom, and all the inferior ones pulled up. This raising of seedlings I consider the most interesting part of Pansy-growing, only I would advise amateurs who wish to try it, to save their own seed.

Since writing my former remarks I have been favoured with a sight of a few blooms of the fancy class, which are certainly much improved in form. Here we have no prizes offered for them; but I will endeavour to introduce them; and if nurserymen would only put their hand to the work, they might not have reason to state that they had thousands of plants on hand at this time of the year. The system of not allowing parties to select their own at a price per dozen, is detrimental to the sale of Pansies, and will be.

In conclusion, a word to "H. J." I admit with him that many of the shaded dark selfs are really good smooth flowers, such as cannot easily be put aside, yet the majority of Pansy growers concur with me, that there should be a separate class for them, for they cannot be considered selfs. I would just add that I never allow differences of opinion to alter friendship.

Winton. J. WALKER.

PINUS RUSSELLIANA.

THIS splendid tree is one of the peculiarly fine, robust-growing, and noble Mexican Pines. The young wood is in winter of a rich red or ochre colour, the shoots forming a curve. The footstalks of the leaves are above an inch in length, and are also red. The leaves grow in fives, and are from 11 to 12 inches in length, of a beautiful grass green, slightly drooping from the upper side of the curve. Altogether it is a very beautiful tree. It is growing here finely, but in a sheltered locality, and cannot be generally recommended as a hardy tree.

Bicton Gardens. JAMES BARNES.

SEASONABLE GARDENING HINTS.—JUNE.

ALL young growing specimen plants in pits and frames should be shifted as they require it; when potted they should not be set too closely together, if nice bushy well-furnished plants are wanted; but they should have air freely at all times during the day, and a little even at night in hot close weather. Attention must be regularly paid to the stopping, tying, and training of the shoots, and liberal supplies of water must be given to all growing plants, with an occasional dose of liquid manure to such plants as have pretty well filled their pots with roots.

When all danger from frost is over, many of the larger specimens of the stronger-growing greenhouse plants will do well in a sheltered and rather shaded situation out of doors. The more tender delicate kinds should be kept under glass, and as most of the plants will now be making rapid growth, they must be properly attended in watering and syringing; all the more robust-growing shoots should be stopped, and the plants should be occasionally turned round. All the strong-growing plants that require shifting should have a liberal one, but the more-delicate-rooting kinds should not be over-potted. Abundance of air should be given.

Everything in the flower garden will now require much attention. No pains should be spared at the beginning of the month to remove mis-shapen flower-buds, also caterpillars, from Roses, and to regulate and tie up any shoots that may require it. All tall-growing herbaceous plants in mixed borders will require tying up as they advance in growth, so as to keep up a neat tidy appearance. The species of Iberis, Aubrietia, and other spring-flowering plants may now be increased by dividing them. They should be planted on a border where they can be attended during the season.

Tulips and other bulbs in the flower beds, which it may be desirable to lift, so as to fill the beds with the summer-flowering plants, may, if not quite ripe, be lifted carefully with a little soil to the roots, and laid in a border in the kitchen garden, where they may remain until fully ripe. If the weather be dry and hot all newly planted beds must be well watered. Herbaceous plants coming into flower will also be very much benefited by an occasional good soaking of water.

Weeds will soon become troublesome in the kitchen garden if not kept well down; advantage should, therefore, be taken of hot dry weather to run the hoe frequently between all young-growing crops. Ground should now be prepared for planting Brussels Sprouts, Borecoles, Broccoli, Cauliflowers, and Savoys; also trenches for Celery. Advantage should always be taken of showery weather to put out the plants, for then they soon get established, and much watering is saved. Sowings of Peas, Turnips, Spinach, Endive, and Lettuce should be made.

As most kinds of fruit are abundant this season, a timely and a liberal but judicious thinning of the fruit is a matter of much importance, and one unfortunately too generally neglected. I have so often urged the necessity of attending to the proper thinning of fruit, and its importance, in these pages, that I do not think it necessary to enter on the subject at present.

As all kinds of fruit trees will now be making rapid growth, much attention will be required in the stopping, thinning, and regulating of their shoots. The foreright shoots on Plums, Pears, Apricots, Cherries, and Apples should be shortened-back, but not cut quite close at the present time. The shoots on Peaches, Nectarines, Morello Cherries, and Apricots should be well thinned and nailed or tied in as they advance in growth. Great attention will now be required to keep down insects. Caterpillars and green fly do much injury if not promptly dislodged. As to the caterpillar on gooseberry bushes there is no better or easier method of destroying them, than simply dusting a little powdered white hellebore on them, and if this is done as soon as they are perceived on the branches, one application will in general clear them. Late vineries should have abundance of air during the day, also some at night, with fire heat in dull weather.

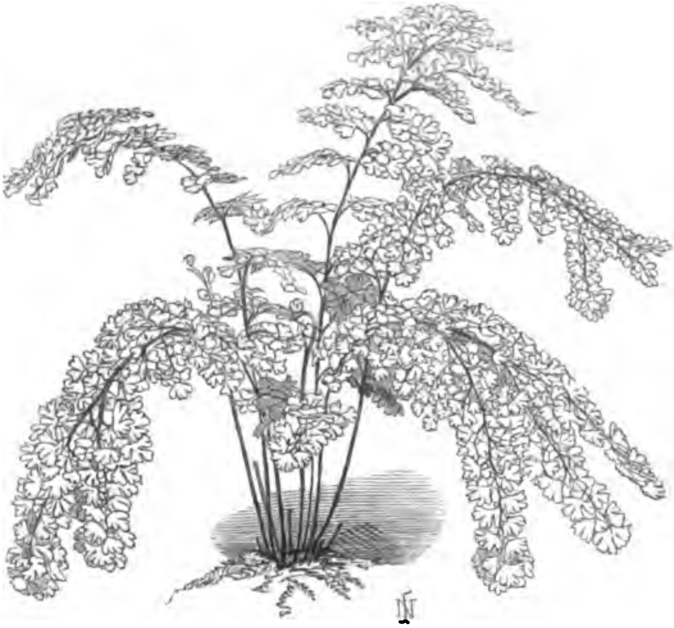
Stourton. M. SAUL.

SEEDLING PINE APPLES.

THERE is, perhaps, no variegated plant more beautiful than the Pineapple, varying, as do its markings, from stripes of pure white to a rich red and white, so much so as to lead those who are not acquainted with this changing habit, to conclude that there are two varieties. The great drawback to its usefulness as a decorative plant, is the presence of the saw-like spines on the leaves, which render it dangerous in-doors. In order to try and remedy this, I made an attempt in the spring of 1865 to cross the Smooth-leaved Cayenne with the pollen of the variegated variety, but whether any cross took place is doubtful; I think not, though every flower operated upon set a seed. The fruit proved a very fine one. To make all certain I took it to Berry Hill, where Mr. Rogers assisted in searching out the seeds. It was some time before we could make certain of them, not having seen any before. In this instance they were kidney-shaped, a little larger than a Millet seed, brown in colour, and through a glass were seen to be irregularly veined all over, making the dark surface appear like specks of rich velvet. The seeds, if not too ripe when the fruit is cut, are enclosed in small ear-like cells, covered by closing up the bract, which is no doubt provided by nature to protect the seed from birds, &c., as this bract does not commonly grow downwards until the flowering is over.

We found in all over fifty seeds, every one of which vegetated freely, but although the plants were all varied in some way, not one of them showed any light variegation. I left a few seeds with Mr. Rogers, who is a very successful Pine grower. He was the first to ripen a fruit—in about eighteen months. It weighed four pounds, and was pronounced by Dr. Hogg to be very handsome in shape, but deficient in flavour. The latter may improve; it would not, I think, be possible to improve on the habit. There are about one in five smooth-leaved; several have turned in since, but none so remarkable either for shape and habit. I am still in hopes of being able to carry out my object, but in a more indirect way.

Cliveden. J. FLEMING.



NEW FERNS.

WE are indebted to Mr. Williams, of the Victoria Nursery, Holloway, for the use of the accompanying illustrations of new Ferns, from his book entitled "Select Ferns," recently published,* of which the following extracts will give some idea of the style and purport, so far as the descriptive portions are concerned:—

"*Adiantum excisum multifidum.*—This charming plant made its appearance in my own establishment, and, I may safely venture to say, it is one of the handsomest and most useful of its genus. The fronds are quadripinnate; the pinnæ deeply cut, giving it a very graceful appearance, from 12 to

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* Select Ferns and Lycopods, British and Exotic. With Illustrations. By B. S. Williams, F.R.H.S. London: Published by the Author.—An excellent practical and handy treatise on garden Ferns, well supplying a want which has been long felt. Nine hundred of the best species and varieties of Ferns known in cultivation, three-fourths of them Exotics, are popularly described, and the peculiarities of their culture carefully explained. The book, which forms an elegant volume of some three hundred pages or more, should be in every cultivator's hands.

18 inches in height, and rich dark green in colour; stipes and rachis black. The apex of every frond is frequently divided into several branches, which oftentimes are again divided, thus forming a beautiful tassel some 2 or 3 inches long, which is well represented in the figure. It partakes somewhat of the character of A. cuneatum and A. concinnum, and will become one of the very best for bouquets or Wardian cases." [See opposite.]

"*Gleichenia circinata glauca.*—A very fine variety of the preceding [G. circinata], differing in being more robust in growth and thicker in texture; the young growths and the under side of the fronds are beautifully glaucous. Native of New Zealand, &c."

CLARKE'S WATER-JACKET TUBULAR BOILER.

HAVING for some time paid great attention to heating garden structures under a variety of circumstances and with variable success, and having some years ago conceived a great partiality for the tubular boilers, insomuch as with them, and by burning coke (for which they are best adapted), a great nuisance in the shape of smoke and blacks falling on the glass and plants was got rid of, I advised my then employer, the Earl of Darnley, about the year 1859, to put down three of Ormson's tubular boilers at Cobham Hall. At that time two wrought-iron saddle boilers, that had been in use about eleven years, were taken out; one of these had given way and was worn out, while the other, though put down at the same time, proved to be in good condition. During the time I remained at Cobham, the tubular boilers acted very well, but consumed a great deal of fuel, and I much regretted the great waste of heat by the chimney. About four years ago I put down at this place one of Clarke's water-jacket boilers, and although this worked very well, and several others put down in this neighbourhood at my recommendation are giving great satisfaction, I still considered the waste of heat escaping by the chimney as unsatisfactory.

Having to replace an old boiler this winter, I determined to try whether the tubular boiler could not be made to work a flue inside the house, as well as pipes, by keeping the boiler well down. I put down last January one of Clarke's water-jackets, and carried the smoke into the flue that the old open-topped boiler had worked, and the result is the most satisfactory of anything I have yet met with in the way of heating. I have cut off two other boilers, and attached two more houses to the new boiler, so that it is now heating three vineries, each about 60 feet long; and during the windy weather we have experienced, notwithstanding that they are old houses with open laps, there has not been the slightest difficulty in maintaining the required temperature. I do not say it would answer in all cases, but this answers remarkably well, heating the flue to a length of about 60 feet perfectly; and as nothing but coke is used for fuel, the flue is not likely to become choked with soot to impair its usefulness. There seems to be a liability in tubular boilers to give way, and I believe one of the boilers at Cobham Hall did so since I left there in 1861, but I think the proportion is not very large to the many that do stand well to their work. Without in the least wishing to depreciate the improved form of saddle or other boilers, I believe we have in Clarke's water-jacket, when set in the way I have described, a most powerful and economical boiler.

Studley Royal. JOHN CLARK.

BEDDING ROSES.

MR. PAUL'S observations (p. 74), on the bedding-out of Roses, will commend themselves to all true lovers of these beautiful flowers who have given the system a trial. It is gratifying to hear that the practice is on the increase, as it is a step in the right direction, and ought to be the rule rather than the exception.

On this soil and with the system which I pursue, I find the vigorous and free-growing sorts to be the best adapted for beds. Mr. Paul has not included in his list one which we find to be peculiarly well adapted for bedding-out—viz., Souvenir de la Reine d'Angleterre, which is vigorous in growth, and so continuous in flowering that it is only checked by the frosts late in the season. I can fully confirm his statement of the good qualities of Anna Alexieff, Baronne Prevost, Beauty of Waltham, and Prince Camille de Rohan; and, in addition, I find François Arago, Simon St. Jean, Moss Lanei, and Ville de St. Denis, particularly well adapted for the purpose in the soil of this place. These I have proved, but I have many other sorts under trial only, so that I cannot yet write of them with any confidence.

We always take extra care in the formation of the beds intended to be planted, and if Roses have been previously growing in them we take away the whole of the soil and replace it with new materials, consisting of strong maiden loam and well-decomposed manure. If the subsoil is a good stiff clay so much the better; it may be trenched-up and partially mixed with the new soil; but if it is gravel, or rock, or any very porous dry substance, the bed should be excavated to a greater depth than would be necessary with a cooler subsoil. After planting, the ground is made firm, and we commence at once to encourage growth—not by heading-back, but by pegging every shoot down firmly on to the surface of the bed. This in its effects is equivalent to heading-back, because as soon as the plants get settled they throw up very strong shoots from the centre close to the surface, which may either be pegged down at once, or left to grow upright until the pruning season, at which time I usually cut out all the old wood from which the flowers were produced the previous year, and peg down the young shoots in all directions over the surface of the beds, only shortening them when they come too near the edges of the bed. By this mode of treatment the beds soon become completely covered, and in due season a profusion of bloom is the result. I find it to be an advantage to top-dress every year, which is done when the pegs are removed for pruning. It is worth mentioning that I always use pegs made from the Yew tree, if possible, and they are best made during the winter, and laid by to season.

Redleaf. JOHN COX.

THE STRELITZIAS.

THIS splendid genus of Musads is, I think, not so much grown as their great beauty merits. I had last February a plant of the dwarf species, S. humilis, in flower, with twenty-seven spikes on it, and few plants looked so gay and interesting at that wintry season. This plant was grown in a warm conservatory amongst greenhouse Ferns, dwarf Palms, and other plants, and I find the way to flower it in perfection is to give it plenty of room for its roots either in a very large pot or tub. My plant in flower was shifted into a large tub about two years ago, and it now forms an immense mass of foliage and flowers. The Strelitzias purposes for which they are required, putting one bulb in a 6-inch pot, three in an 8-inch, five in a 9-inch, and fifteen in a 12-inch, and so on. In doing this, sufficient space must be left between the bulbs to allow room for the young growths, which can at this time be seen, as well as the direction they are taking. Generally each bulb makes two growths, one on each side. Their roots are annual, therefore any old ones that may be left adhering to the bulbs must be cut away.

The compost I find to suit these Calanthes is one-half turfy loam cut from an old pasture 2 inches deep, and used before the fibre is destroyed by long keeping (it is well to half-char this, to destroy all vegetable as well as insect life merely), one-fourth old dry cow dung, and one-fourth good fibry peat, adding a few handfuls of charcoal of the size of walnuts. These ingredients should be mixed well together, and be used in a moderately dry state. In potting, reject the finer portions. Let the pots be perfectly clean and dry, as well as the crocks. Make the drainage as perfect as possible, by first laying a hollow crock over the hole, the hollow side downwards, and placing smaller crocks over this to the depth of 2 inches for the smaller and 3 inches or more for the larger pots. Upon this drainage lay a little moss—a very thin layer, or it will defeat the end in view, and upon this fill in the compost, the coarser portion at the bottom. Press it down moderately, and then fill in as much compost as the pot will hold, and upon this place the bulbs, with a little silver sand under each, the base resting on the soil—not sinking in it—and on a level with the pot rim. Thrust a small stick into the soil on each side of the bulb, but an inch higher, close to it, but not in the way of the young growth. Tie these sticks together above the bulbs, and this will keep them firm on the soil until they have made roots, when the sticks may be taken away.

When the potting is completed, place the plants in a vinery or plant stove, well exposed to the light and not too far from the glass, in a minimum heat of 55° to 60°, maximum 70° to 75°, with a moist atmosphere. They must have but little water until they commence to unfold their foliage, when, from that time until they have completed their growth and their leaves decay in the autumn, they will require water in abundance. The water should always be about the same temperature as the house they are growing in; this is of the greatest importance, as to water any plant growing in a warm house with cold water is, to say the least of it, bad practice. By the middle of July they will have filled their pots with hungry healthy roots, and from this stage onwards I give them very weak and clear manure water about once a-week, according to the brightness or dulness of the weather; if bright clear weather they will require more, if dull less of this stimulant. It is safe practice to give four or five waterings with clear water to one of manure water. Close attention to watering, avoiding extremes, and keeping the plant clear of insects, is all they require until they commence to unfold their flowers, when less water, and a somewhat cooler and drier atmosphere will be required until they have done flowering, after which they must be put in some moderately warm place, not higher than 50°, nor lower than 45°, if full to the sun and light so much the better, and kept quite dry until they commence to grow again the following season, when the routine of practice detailed above must be repeated. The insects to which they are subject are brown and white scale. If allowed to be in too dry an atmosphere, or to want for water, thrips will attack them; but frequent washing with clean warm water will remove these pests.

The above routine of culture is applicable to the following varieties, which may be obtained at very moderate prices.

C. vestita rubra, white with crimson eye.
C. vestita lutea, white with yellow eye.
C. vestita nivalis, pure white.
C. vestita cuprea, white with bronze eye.
C. vestita Turneri, white with pink eye.
C. Veitchii, rose with white eye.

Alton Towers. WILLIAM MOORE.

HABROTHAMNUS ELEGANS.

WHEN well grown this grand old Mexican plant stands second to none as a decorative plant for the conservatory. It is of vigorous growth and a profuse bloomer, even in midwinter, which is no mean quality for a plant to possess. It is particularly well adapted for growing as a single specimen, or for covering a wall or pillar in a lofty structure, as well as in one of moderate proportions. When grown on a pillar it is perhaps seen to the greatest advantage. There is one in the conservatory at this place that I planted from a small pot two years since; it is now 15 feet high and well proportioned, and was covered with bloom from top to bottom, from the middle of October onwards: it is growing on a pillar between an Acacia grandis of the same height on one side, and a Passiflora on the other, and its appearance all the winter has been strikingly beautiful. It is planted in a well-drained soil, composed of one-half rather heavy but rich turfy loam, and the remainder leaf mould and road drift in equal proportions. It blooms on the last year's growth, and should not be pruned until it has done blooming, and the wood is thoroughly ripened; even then it must be done carefully by spurring the weakest shoots, and shortening others in proportion to their strength, while some may be laid-in their full length to increase the size of the plant if required. This mode of treatment will insure a good winter bloom, but by a judicious pruning and thinning of the branches at different times in the year, the plant can be made almost a perpetual flowerer. It should have abundance of water when growing, and manure water once a week.

I have found it useful when grown in pots, under which conditions it can be made to flower well twice a year, by the assistance of bottom heat, which it enjoys very much, and by which it is easily excited into growth. Treated in this way the plant becomes almost deciduous. It is easily propagated from half-ripened shoots inserted in sandy soil and placed in bottom heat, and after it is established it should be treated as a greenhouse evergreen shrub. A healthy plant will often set a quantity of fruit at the extremities of the shoots; these are of a rich rosy purple, like the flowers, and remain on the plant a long time, rendering it doubly interesting.

Lillesden, Hawkhurst. THOMAS RECORD.

NOVELTIES, &c., AT FLOWER SHOWS.

FROM the fact that more new *Auriculas* have been produced during the past two years than during the previous four or six years, it is fair to infer that this fine old florists' flower is steadily rising again to the high position it once held in the popular estimation: "a flower," to use the words of a fine old florist, "which for years has obtained my greatest regard." The Floral Committee has just awarded first-class certificates to *Mrs. Mendall*, a fine new white-edged variety, the ground colour dark, the paste pure white, the pips of fine quality, and forming a large and handsome truss. *Wonderful*, and *Novelty*, two fine and handsome Alpine varieties, obtained the same award. The former has a rich and striking flower, the ground colour being velvety crimson, distinctly margined with bright rose, and clear, smooth yellow paste, the pip large and very fine indeed. *Novelty* belongs to a class that have been well denominated "fancy" flowers, changing in character at every stage of its development to such a degree as that three distinctly different pips could sometimes be plucked from the same plant. When the pip expands the paste is of a deep sulphur colour, but as it ages this changes to white. The ground colour at the outset is dark, edged with buff, but with age the buff changes to deep violet. These flowers all came from Mr. C. Turner, Slough.

In the hands of Mr. James, gardener to W. F. Watson, Esq., of Isleworth, the herbaceous *Calceolaria* has become so much improved that it also bids fair to regain the foremost position it held when Story, Constantine, and others made it famous in past days. The tall-growing old forms are well-nigh annihilated, and in their place we now get the dwarf compact habit of the shrubby kinds allied to those glorious flowers that bear such gorgeous and handsome tints. At a recent spring show at South Kensington, Mr. James staged half a dozen plants that were quite an exhibition in themselves. They were named, but not for the purpose of being propagated. Let the strain be once obtained, and fine and handsomely marked varieties will be sure to result. The habit of growth is such that when the plants are exhibited but little "tying-out" is required.

New *Pelargoniums* have put in appearance quite early this season. At the meeting of the Floral Committee on the 19th of May, as fine a lot of fancy Pelargoniums as could well be imagined came from Mr. Turner, and they were as much deserving of notice for their variation as for their excellent qualities. First-class certificates were awarded to *East Lynne*, *Leotard*, *Fanny Gair*, and *Princess Teck*. *East Lynne* is a pleasing deep rose-coloured flower, the top petals darker, and with a pale edging to the flower; *Leotard* is of a rosy carmine shade, deeper on the top petals, shown on this occasion in fine conditon; and *Fanny Gair* is a very pretty light flower, free-blooming and showy. All these were shown as yearlings in 1867. Quite new was *Princess Teck*, a charming light flower, the lower petals slightly blotched with pale rosy carmine, the upper petals violet rose, with white margin. This will make a good exhibition kind. A very fine large-flowered variety, also from Mr. Turner, received the same award. It is one of those soft, yet glowing deep salmony-carmine flowers, of which Foster's Emperor was an excellent representative last year. It is named *Troubadour*, and was also raised by Mr. Foster. The flowers are large, smooth, and finely formed, the trusses quite effective. *Magnet*, a fine market and decorative kind, with vivid crimson flowers and dark top petals, received the same award as a valuable decorative sort. It came from Messrs. Dobson & Son, Isleworth.

Messrs. F. & A. Smith received a first-class certificate for *Azalea Sir Robert Napier*. It is one of the deepest coloured flowers that have yet been produced, being of a deep red hue, and not without life in it. Like the deeper-coloured Pelargoniums of a few years ago, colour will have to be considered before form, though in this last respect the new variety seems better favoured than that richly coloured flower of a couple of years ago, called Stella. *Schizanthus pinnatus splendens*, a fine violet-coloured variety with black centre, was shown by Mr. Green, gardener to W. W. Saunders, Esq., of Reigate, and received a first-class certificate. It has been obtained by careful selection, and it serves to show how much the forms of many of our common annuals are being changed by subjection to a like process. Mr. Salter produced a stand of his handsome double *Pyrethrums* at South Kensington on the 19th ult. Freedom and continuity of bloom characterise many of them, and they will be certain to rise in popular estimation as decorative plants.

R. D.

MONTHLY CHRONICLE.

PINE APPLES are now imported to this country from the Azores. The fruit is not only large and of excellent quality, but is conveyed in a fresh and perfect state. The first batch brought into Liverpool in the pots in which the plants had been grown, was so fine, that the lot upwards of fifty, was sold wholesale to one purchaser, at 30*s*. each. Since then some smaller lots have been sent to Liverpool and Hull, the last consignment realising, according to size, from 12*s*. to 25*s*. each. Such fruit must, especially in the winter season, enter into formidable competition with our home-grown produce. Those not imported in pots, were separately packed each in a cradle—that is, the stem was made fast in a hole in the centre of a board, of sufficient diameter to clear the circumference of the fruit; a corresponding piece was placed above the crown, and the two were connected together by thin laths, placed sufficiently far apart to allow a free circulation of air, and yet so as to prevent the fruit from being bruised. Thus packed they came to hand in capital condition, though not so good as those which had been brought upon the plants.

—— Mr. Rose, formerly gardener at Floors Castle, now of Frogmore, before leaving the former place, was entertained at a dinner given by his friends, on which occasion a Presentation was made to him, as a token of respect and esteem on the occasion of his entering upon the office of Head Gardener to Her Majesty. The testimonial consisted of a purse of sovereigns and a gold watch and chain.

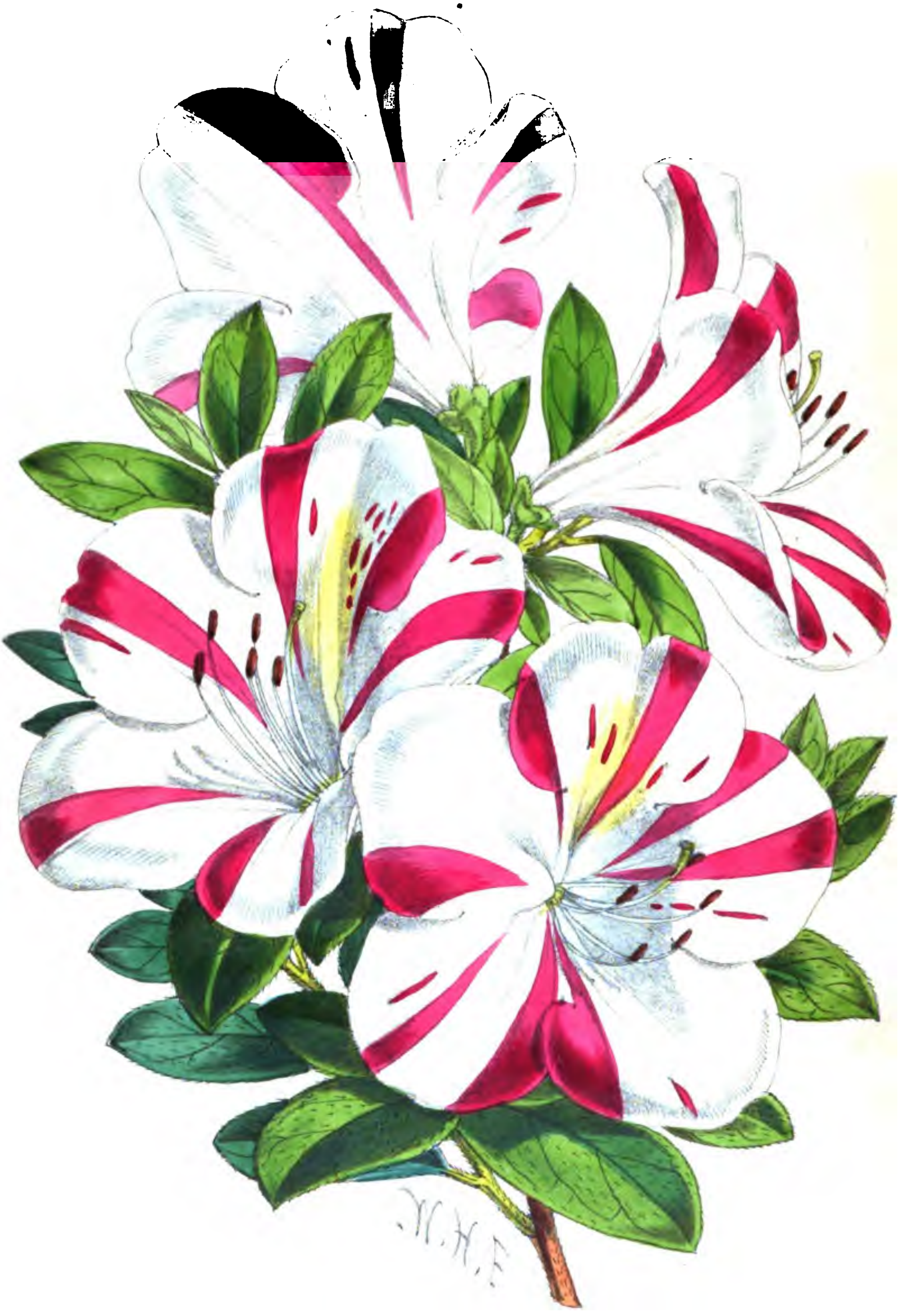
—— A Golden Coleus has been obtained by Mr. McPhail, gardener to C. Telford, Esq., of Bromley. It is a sport from C. Blumei, which it resembles, except that the green is exchanged for a decided yellow tint, like that of the so-called golden-leaved Pelargoniums. It will probably form a good contrast with the rich dark-coloured sorts now in cultivation. The variety has been named Telfordii, and has passed into the hands of Mr. Wimsett.

—— Among the Seedling Azaleas at Ghent were three which appeared very desirable in point of colour, surpassing everything which approached them in brilliancy—namely, *Roi d'Hollande*, a rich vermilion, spotted on the upper segments, and remarkable for smoothness and substance; *James Veitch*, a most brilliant tint of magenta rose; and *Coloris nova*, a rich glowing crimson.

—— Several very beautiful varieties of Double Chinese Primroses have been sent us by Messrs. Windebank & Kingsbury. They comprise a double white with rosy purple stripes, a double blush, a double carmine rose, and a double rosy lilac, all exquisite flowers. The various colours are represented amongst fern-leaved varieties, as well as those with foliage of the usual type. These new forms are, many of them, remarkable for their dense and symmetrical flowers, the striped ones being the least so; but all are decided acquisitions.

—— In addition to Mr. W. Paul's strain of Hardy Primroses, a fine and extensive collection is in the hands of Mr. Barron, at Elvaston Castle. He has some twenty or more distinct varieties. The darkest is a deep purplish rose flower, with a showy orange centre; the palest a really pure white Primrose, with a conspicuous and striking yellow centre. Other flowers are of rose, violet, salmon-rose, lilac, and fawn-coloured ground-colours, some of the last-named shade being very novel and pretty. The flowers are in some cases unusually large, and all stout in texture, and of good form. All these are Primroses, for as yet there is no trace of the stem and truss of flowers like the Polyanthus.

—— Of all the Palms, Chamærops excelsa is the hardiest. C. humilis, which is indigenous in the south of Europe, and grows well at Montpellier, is very hardy when adult, but tender in the young state. M. Sahut, a nurseryman of Montpellier, had, side by side, beds of young plants of C. humilis and of C. excelsa, of one or two years' growth, each plant having three or four small leaves, exposed to a severe frost in January last (therm. 10 °F.), and all those of C. humilis were destroyed, while those of C. excelsa were unhurt. Adult plants of C. humilis were not injured.



J N Fitch. Imp.

Azalea (*indica*) Lizzie.

AZALEA (INDICA) LIZZIE.

WITH AN ILLUSTRATION.

THIS fine Azalea has twice passed the ordeal of the Floral Committee, on one occasion receiving a first-class certificate, and on the other a certification that its high character had been well maintained. Its chief peculiarities are its smooth surface, which gives it a perfect outline, its distinct markings, which take the form of stripes of bright carmine on a pure white ground, varying in breadth and disposition, and its great substance, which results in the long endurance of the flowers. We learn from Mr. Kinghorn, by whom it was raised, that this latter quality is very noticeable, the plants standing much longer in flower than those of any other variety. The flower opens with a greenish tinge, and blanches as it expands, so that the fully-developed flowers have a pure white ground, which is well set off by the well-defined and elegant markings. Like most of the varieties Mr. Kinghorn has sent out, this new striped Azalea is one which may be recommended with the highest confidence. We learn that the constitution and habit of the plant are all that can be desired.

The improved varieties of greenhouse or Indian Azaleas are certainly not surpassed, if equalled, either for exhibition or conservatory decoration, as by a selection of the earliest, the medium, and the very late sorts they can be had in bloom from Christmas till the end of June. The earliest and most forward plants may be introduced to the forcing house from about the middle of October, at intervals, to keep up a succession of bloom. All the varieties, observes Mr. Kinghorn, at whatever season they bloom, are much improved in quality by being kept in rather a close warm temperature while expanding their blossoms.

M.

NOTES ON LILIES.

VERY desirable is it that some botanist would do for Lilies what the late Mr. Haworth did for the Narcissi. The genus, indeed, is a good one, and ought not to be broken up, but some of the species are either bad or insufficiently discriminated. This work of revision would be best performed by a botanist-cultivator, as the French call him—a collector resident near the metropolis, and having free access to books, and especially to living plants. Of course, such a student would consult herbaria, and standard books as "Redouté's Liliaceæ;" but the decisive appeal must be made to living specimens. Some authors, for example, confound the common Orange Lily and the Bulb-bearing Orange Lily; but they cannot have compared the plants in a growing state, and certainly have never examined the bulbs. If the reform alluded to does not come soon, the labours of hybridisers will render it extremely difficult, if not impossible, a result which florists probably would not much regret. The following notes are in the florists' interest:—

L. pomponium, and its variety *L. pyrenaicum*, are now seldom seen in flower gardens. They do not possess much beauty, their flowers emit an unpleasant odour, and they are mostly relegated to the shrubbery. *L. Martagon* may be allowed to go along with them; being very robust it is well adapted to the wild or semi-wild parts of pleasure grounds. I have seen it growing luxuriantly in the wooded gorge of a deep valley, by the side of a considerable stream, where it propagated itself, and sported into a diversity of tints. There is a white variety in cultivation. The Scarlet Turk's-cap, *L. chalcedonicum*, is more of a garden plant, and thrives well in any dry sunny nook if left undisturbed, but is impatient of frequent removals. There is a tall, robust variety with a cymose or fastigiate inflorescence. To this group may be added *L. monadelphum superbum*. I give the name which, with the plant, has emanated, in Scotland, from the Botanic Garden in Edinburgh. It is certainly monadelphous, as the broad-winged filaments of the stamens cohere at the edges. It may be loosely described as a gigantic L. pyrenaicum, only the tops of the petals are less reflected. In the deep moist soil of my garden it multiplies freely, and throws up numerous stems 4 or 5 feet in height, crowned with loose corymbs of from ten to sixteen brilliant canary-coloured flowers. Towards the end of June it is an extremely showy plant.

L. tigrinum is well known, and is valuable as one of the latest of the Lilies. The Poet Laureate speaks of it as a sign of the departing year, asking in winter—" Where is now the Tiger Lily ?" The variety introduced by Mr. Fortune being one-half taller, and about ten days later in flowering, is a most desirable plant.

The American species, *L. superbum*, *canadense*, and *penduliflorum* are very beautiful, but are difficult to keep in a satisfactory state, at least in the northern districts of the country. It is usually said that they should be grown in a deep peaty border. To this advice I would add, that they should be planted in the full sunshine, and in the warmest nook of the flower garden. What they want in this country is the bright glowing summer of Upper Canada and the Northern States of America. *L. philadelphicum*, I believe, belongs to this section, but I have not seen it. *L. colchicum* is a very beautiful species, rare in gardens, and requiring much the same treatment as the preceding. Relays of them all should be kept in pots, and it should be remembered that they sometimes continue dormant for a year. This year I was obliged to bring on my potted *superbum* by a little bottom heat.

The Orange Lily group is a brilliant one. It is composed of *L. au-*

rantium, *bulbiferum*, *umbellatum*, *kamtschatense*, *pennsylvanicum*, and, perhaps, some others. The varieties are numerous, and some of them are as intense in colour as the finest Ghent Azaleas. They are for the most part very hardy. *L. pennsylvanicum* is an elegant miniature form of the common Orange Lily, but specifically different. It thrives well in light peaty earth.

L. candidum has been loved as the Lily, *par excellence*, by many generations. It has long been associated with pictures of the Virgin,

"The Lily of Eden's fragrant shade."

For simple statuesque beauty it is, perhaps, unrivalled in the empire of Flora. Only the single variety ought to be cultivated. It thrives perfectly in light and moderately dry soils. To show the capricious effects of situation, I may mention that, to my great regret, I cannot keep this favourite Lily. Being a semi-herbaceous plant, or rather having green leaves above ground, it is regularly killed by damps and frosts in winter. Its congeners, *L. longiflorum* and *japonicum*, with their numerous varieties which are daily increasing, are surpassingly beautiful plants, but they are rather tender for the general climate of Great Britain. They afford admirable decoration for greenhouses and conservatories; and where there is room a store of them should be kept in cold frames or pits. For several summers I have plunged out *L. longiflorum*, and repotted it in autumn. It is needful to replace it in the pots before the leaves have withered, for previous to that stage the young shoots for next year start from the bulbs, and then the fibrous roots are injured by the lifting. My success has not been great; probably the plan would succeed better in the south.

L. excelsum, or what I got for it from an eminent London nurseryman, has thriven well with me. It is quite hardy. It throws up a stem 4 feet high, which hitherto has been crowned by a single shallow bell of considerable size. The colour is pure white, but the interior of the petals is often soiled in wet weather by the abundant brown pollen, which I suppose accounts for the nursery synonymes, *L. testaceum*, *isabellinum*, &c. It is an attractive plant, but not equal to its great Himalayan compatriot *L. giganteum*. The latter has repeatedly stood the winter and flowered in the open air, in the nursery of Messrs. Dickson & Co., Edinburgh, who have also raised many plants from seeds saved in this country. It is a great seed-bearer, and it is to be hoped that in the hands of hybridisers it will yet yield magnificent results.

I say nothing of the gorgeous and well-known *L. auratum;* and as to the scarcely inferior *L. speciosum*, or lancifolium as it is often called, I refer to two excellent papers by "Hesperus," published some months ago in the *Journal of Horticulture.*

Who will tell us something of *L. carolinianum*, *concolor*, *croceum*, *pumilum*, *monadelphum* (of the "Botanical Magazine"), *tenuifolium*, *pseudo-tigri-*

num, *cordifolium*, *Buschianum*, *Thompsoniaum*, *Wallichianum*, &c.? Are they extant in this country? Or must some of them be sought again in their native habitats?

It will be observed that I have spoken only of the more common hardy species, and probably I have said nothing but what is well known to many. My most important remark, which I put, as young ladies do, in the postscript, is this, that most Lilies, even those of the hardiest sorts, are weakened by frequent transplantation. *L. chalcedonicum* takes two, sometimes three years to recover the effects of a removal. I suppose the fibrous roots under the scaly bulbs are not merely annual rootlets, as in most other bulbous plants. From this remark a skilful gardener will readily draw his own practical conclusions. It will be perceived that it can be little better than death to Lilies, for their scaly bulbs to lie withering on the counters of seed warehouses, where Tulips, Crocuses, &c., may continue for a long time with impunity.

Ecclesmachan. J. SMITH.

NOTES ON BEDDING PLANTS.

THE following Verbenas are well worthy the attention of "bedders-out," who, desirous of trying something new, are yet asking who will show them anything that they can take to their hearts and their gardens, in full assurance that they will be "faithful found among the faithless":—Madame Lefebvre, a rosy crimson self flower, that does not burn, nor become washed-out by rain, of close compact growth, and free blooming; Le Grande Boule de Niege, a capital pure white variety, that will make a splendid bed if appropriately edged with some shade of colour that will do it justice; Mrs. Newton, bright deep scarlet, that keeps its colour well under any circumstances, and does not riot in growth at the expense of everything about it; Dante, very bright scarlet, with showy white centre, a variety that has only to be tried to be appreciated; Duchess, a pale-flowering kind, with showy rosy crimson centre, an excellent bedder, being very symmetrical in growth, and continuous in bloom; King Charming, rosy cerise with lemon centre, a flower that under the hottest sun does not fade; and King of Lilacs, pale lilac, infused with violet, an extra fine and useful bedding kind. In these days, when new Verbenas are plentifully produced, but when good and reliable bedding kinds are the exception rather than the rule, the foregoing list may prove of use to many who are unwilling to banish the Verbena from their gardens, but who hesitate to buy, for fear they may suffer disappointment.

There are some gardeners who yet cling to the Heliotrope as an outdoor plant, both for the sake of its fragrance, and because it can be so liberally drawn upon for cut flowers. Visions of new hybrid Coleus, as plentiful as blackberries, and in some instances as much alike; of high-coloured Variegated Zonal Pelargoniums, reputed to be quite distinct in character, though to the eye of an ordinary observer the family likeness is so close as to be almost bewildering, and of other suchlike expensive toys for the flower garden, cannot draw off the allegiance of these humble souls from the old-fashioned plants they so ardently cherish. To such, that fine Heliotrope, Surpasse Madame Guascoi, is one that will fill them with joy, if they will but obtain it. It was introduced from France a year or two ago; it is pale in colour, but the trusses are immense, and so freely produced as to well nigh hide the foliage of the plants. It has a highly vigorous constitution, and last year stood well the test of out-door work in beds.

Two very dwarf-growing bedding Dahlias can be highly recommended—Little Wonder, orange crimson, and Orientale, rosy pink, both very effective. They are dwarf-growing—not reputed to be so merely, and the shades of colour are very effective. As a back row to a ribbon border on a large scale, Little Wonder would do good and acceptable service.

In the way of bedding Zonal Pelargoniums I have notes of the following as among the most effective kinds it was my lot to see last year:—Commissioner, vivid orange scarlet, very fine and striking; Louise Roezeler, salmon, dashed with orange, a grand bedder; Leonidas, deep glowing scarlet, very fine and effective; Louise Veuillot, a hybrid Nosegay variety, with brilliant crimson flowers, of excellent shape and substance for a Nosegay variety, also a splendid bedder; Achilles, brilliant deep scarlet, a great improvement on Punch and others of a like character; and Jules César, an improved Roi d'Italie, the flowers of a fine hue of colour, and well adapted for pot culture. With one or two exceptions the foregoing are of French extraction.

As a summer bedding plant, the old blue Campanula carpatica is worthy of a much wider recognition. Being a hardy perennial, it will do well in almost any situation, but it should not occupy a damp and low position during the winter. It commences to bloom by the beginning of June, and will continue to flower through the summer. The seed pods should be gathered, as they have an unsightly appearance, and their removal tends to induce the production of fresh flowers. The tufts should be lifted in early spring, divided if necessary, and replanted, using some good soil about the roots. It is invaluable for ribbon borders, and when once tried will not be readily abandoned. There is a so-called variety to be met with in some places, under the name of Bowoodiana, said to be much darker in colour and more branching in the habit than the old variety, and said to have been selected at Lord Lansdowne's seat, at Bowood.

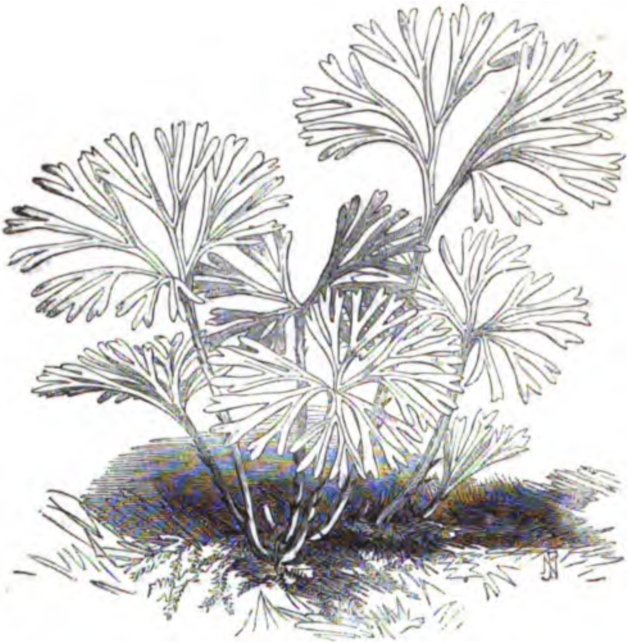
Those who have never tried the Cliveden Yellow Pansy as a summer bedding plant should do so. Two years ago Mr. Turner had a bed of it at the Royal Nursery, Slough, and a more glorious mass of yellow could scarcely be conceived, combined with a dwarf and symmetrical growth. The plants should be pegged down when bedded-out, and liberally top-dressed during the summer. Previous to top-dressing an application of weak manure water will be found most beneficial. Early planting should be followed to get the plants established by the time hot weather sets in, and then

> "The unperishable glow
> Of summer sunshine"

will be reflected from innumerable flowerets "draped with gold," full of soft beauty and strange delight.

QUO.

RHIPIDOPTERIS PELTATA.



THIS curious little Fern, though it has been for some few years in our gardens, is not yet common in cultivation. It is nearly related to Polybotrya, one of the Acrosticheæ; indeed, by those who adhere to the ancient nomenclature it is called Acrostichum peltatum, but according to others it differs from Acrostichum proper in its free veins, while from its nearest ally, Polybotrya, it differs in the flabellately-forked nature of the venation.

The accompanying figure has been obligingly lent us by Mr. Williams who gives the following account of the plant in his excellent book, entitled "Select Ferns," to which we have already alluded:—"This is an elegant and interesting little plant, making, as its name implies, little fan-like fronds, which grow only a few inches high. I know of only one other plant anything like it, and that is *Actiniopteris radiata*, which has an erect caudex, and has even a more fan-shaped frond than the *Rhipidopteris*. The latter succeeds well grown in good fibrous peat and sand, a little raised above the rim of the pot, and requires a liberal supply of water all the year round; it does not require a deep pot, as it creeps on the top of the soil; a pan will be the best to grow it in.

"*R. peltata.*—A very elegant little stove Fern, producing, from a slender creeping rhizome, sterile fronds from 3 to 6 inches high, several times dichotomously divided, and presenting the appearance of a miniature Fan Palm; the fertile fronds are sub-rotund, and, like most of the Acrosticheæ, the under side is entirely covered with the sori. An evergreen species, from the West Indies."

M.

SEASONABLE GARDENING HINTS—JULY.

THE hot dry weather and bright sunshine we have had during the past spring for so long a period, have been very favourable to gardening operations, more particularly the early forcing of fruits, as less fire heat was required, and more air could be given than is usual in an average of seasons—both matters of great importance.

The young stock of plants in pits and frames should now have every attention; they should be shaded in bright sunshine, and have plenty of air; they should be watered in the afternoons, and have a gentle sprinkling overhead from a fine rose or syringe. Towards the end of the month the lights may be taken off on mild calm nights.

The plants should be kept near the glass, be turned round occasionally, and shifted when they require it. The stopping, thinning, and tying-out of the shoots should be well attended to. Pelargoniums for autumn flowering should be encouraged to grow, by shifting them when they want it; but large shifts should be avoided, as they flower better when not overpotted. All hard-wooded greenhouse plants placed out of doors, should have the pots plunged in some material to protect the tender roots from the ill effects of a hot dry atmosphere.

The weather in May was so mild and favourable for planting, that many persons got their "bedding" plants out earlier than usual. I got all finished here by the 25th of that month, and I was fortunate in doing so, as we had some fine heavy rains at the time, which set the plants growing, and I have not had need for much watering since. Those who did not get "bedded" out until June have had heavy work, and much difficulty, to keep their plants from suffering; the intense heat and drought have rendered heavy and frequent waterings necessary to keep the plants alive. Dahlias, Hollyhocks, and other tall-growing plants, should be kept neatly tied up as they advance in growth. A good mulching of rotten dung, decayed leaves, or spent bark, around the roots will greatly benefit the plants and save watering, where it can be put on without being an eyesore. All suckers on standard Roses should be removed as they appear; all faded flowers should be picked off daily, and the autumn-flowering Roses should be now well watered with liquid manure. The budding of Roses should be proceeded with as quickly as possible. Mignonette to stand the winter in pots should be sown about the middle of the month in light fresh sandy soil. All blanks or vacant places in borders should be filled up. All weeds should be eradicated as soon as they appear. The surface soil should be kept open and fresh, by frequent stirring with the hoe.

Should the hot dry weather we have had for so long a time, continue through a part or the whole of the month, frequent and heavy waterings will be required by all new-planted vegetables. As soon as any ground becomes vacant it should be prepared at once to receive such plants of the Brassica tribe as will be required for the autumn and winter months. To save time and labour in watering, advantage should be taken of showery weather to transplant Cauliflowers, Cape and other Brocoolis, Borecole, Savoys, Brussels Sprouts, &c. Celery should be planted in well-manured trenches, and be kept well watered in dry weather. Lettuces and Endive should be planted, and sowings of each made for a supply. Ash-leaved Kidneys of all kinds, and other early varieties of Potatos intended for seed, should be taken up at once. They should be allowed to remain on the surface of the ground for two or three days to green, and should then, when dry, be stored away. The hoe should be kept continually going among all growing crops, and no quarter should be given to weeds.

Strawberries are a very heavy crop this season, but will not last long unless a good rain sets in. The plants everywhere have suffered much from drought. When they can be well watered they should have frequent and liberal supplies. The layering of plants in pots for forcing should be proceeded with as quickly as possible. This is the time to insure a crop on fruit trees next season. Want of proper management during the summer months is the real cause of short or deficient fruit crops. By now well thinning the fruit, and by thinning and shortening of the shoots, so that the sun and air may reach every part, and the wood and buds may get well matured, there is a certainty of a crop next year, if the season should be an ordinary one. Of course we sometimes have extraordinary seasons, and the fruit crop may then fail to a certain extent, but these are exceptional cases;

in ordinary seasons, if the trees are but well attended to the previous year, there is no fear of having fair crops—not heavy crops, for heavy crops one year are almost invariably succeeded by a failing crop the following season. All suckers not wanted should be kept removed from Raspberries; and as Strawberries go out of bearing, the runners should be all removed, and the soil between the rows forked up, and well watered.

Stourton. M. SAUL.

ON THE AËRATION OF VINE BORDERS.

ALTHOUGH much discussion has taken place on the cultivation of the Vine and the making of Vine borders, I do not think that the aëration of Vine borders has received that degree of consideration which it deserves. It has been disparaged by some, and set aside by others, as a system far too expensive for general use; and I have been told that the placing of heated pipes directly under the borders would be certain to dry up the soil, and destroy the roots. In practice I have proved these ideas to be vague and delusory; and having for the last ten years had the management of one of the largest and most completely-heated Vine borders in the kingdom, and having during that time been frequently asked for my opinion, I have great pleasure in recording my experience, in the hope of being able to point out a few of the many advantages to be derived from the aëration of Vine borders. We must take into consideration the fact, that the Vine is not indigenous to Europe, but of a warmer climate, and hence arises the necessity in artificially cultivating it in our unpropitious climate, of maintaining as far as possible a healthy and vigorous state of root action, which however essential, is but too often lost sight of in general practice.

In the heated borders above referred to, each house is separately warmed by hot-water pipes in chambers, beneath the border, which is raised above the surrounding ground level. Troughs are placed on the pipes, so that they may be readily supplied with water from a tap when required, by which means, and by a due regard to ventilation, a genially moist atmosphere is maintained under the roots; and this is admitted to the house through ventilators, so that we secure a free circulation of heated air in the house during the coldest weather.

It is well to apply a slight bottom heat for a fortnight or so previous to using top heat. By this means the roots are brought at once into action, and, consequently, there is a better adjustment of the vital force. The temperature of the border is so regulated, as to correspond with the mean temperature of the house. This I have found to be a good and safe guide towards insuring the greatest amount of success. These observations, as to the relative adjustment of heat, should be carefully borne in mind, for by this mode of heating, with indiscriminate firing, not regulated in accordance with any rule as to temperature, I have known the most disastrous results produced. When the borders are not covered with glass, and the Vines are forced early, I find a covering of fern or litter, protected from the chilling rains and vicissitudes of temperature by sheets of galvanised corrugated iron, to answer the purpose of protection admirably. The covering is best done early in autumn, so as to retain the summer heat.

By this mode of heating, the roots are preserved in the most perfect state of health, the sap is more fully elaborated, and the buds break freely and regularly, on Vines 33 feet long, the bunches being produced so uniformly as to have all the appearance of being lined; the bunches, moreover, are large, and the colour perfect. I have found that difficult Grape, the Chasselas Musqué, to ripen perfectly yellow, to hang well, and to be free from cracking. I would observe, that colour and bloom, two essential properties in well-finished perfect Grapes, will be secured by adopting the climatic conditions, above described, which the plants enjoy.

Many, if not most of the diseases to which Vines are subject, arise from the roots not supplying a sufficiency of sap, a deficiency which is occasioned by the temperature of the soil being too much below that in which the stems and leaves of the plants are growing. This causes a disparity between root and branch, which cannot but be hurtful to the constitution of the plant. By adopting and acting up to the sensible motto of Mr. Fish, "SACRED TO THE ROOTS," many of the disappointments which cultivators complain of, will be obviated. I am putting into practice a very simple, efficient, and inexpensive method of heating Vine borders, on which I will make a few remarks hereafter.

Witley Court. GEORGE WESTLAND.

ON TULIPS.

ON these gems of Flora so much has been said and sung, written and rewritten, that it might seem as if nothing that would be instructive or edifying remains to be added. But there may be readers of the FLORIST AND POMOLOGIST to whom most of these writings are unfamiliar, and for such I may make a few observations.

For over three hundred years this flower, the Queen of May, has been ardently cultivated in this and other countries; yet much as its beauty was extolled in past ages, and especially in Holland during the Tulip mania, when fortunes were lost and won in a day in speculating in them, there were then many sorts which were comparatively worthless compared with those of late years.

Now, whether one looks on the Tulip with the eyes of a fancier, or merely admires it as one of the beauties of Nature, it is impossible to look over a fine collection of choice Tulips in bloom, without being struck by their refinement, and their surpassing beauty. The variety of colour, the delicate and artistic markings, and the various shades and hues they present, call forth admiration from many who have no particular taste for flowers in general, and I have oft heard philosophers remark—

"The Hand that made them is divine."

My collection amounts to several thousands, chiefly seedlings of my own, and amongst them are many fine varieties, which, as they become *broken* or *rectified*, develope new beauties every season. These certainly require some care and patience to bring them out, for, as a rule, seedlings seldom bloom under five years—I have known them longer. This season, I have a small lot, bloomed for the first time, from seed sown in 1860. When they first bloom they are generally self-coloured. The Dutch termed these Mother Tulips; we term them Breeders. There are also Bizarres, Byblömens, and Roses, as well as Perpetual Selfs, yellow and white. The Breeders in time become broken, and there are then Feathered and Flamed varieties in each class, and it is in accordance with the form, colour, and artistic markings that the value of each is determined.

Growers adopt various and singular methods to induce them to break. A change of soil and climate, however, affords one of the surest methods. In some situations growers cannot keep them long in the Breeder state, and have to obtain fresh supplies; in others they develope their beauties very tardily. I have known some varieties of Breeders be ten years before there was a break in them—indeed, I have many at the present time that I have grown eight years, and have never seen a break yet. And after waiting anxiously season after season, the break may at last prove a worthless variety in respect to the fine qualities requisite for a first-class Tulip.

The most important points of all are form and purity—a short cup of great width, stoutness of petal, and fine markings; and no matter to which class it belongs, it must be absolutely pure.

In some varieties the break may only be a partial one the first season, and improve the second. Others come only what is termed half broken, and never alter; these are worthless. In the feathered state—that most admired and valued by connoisseurs—the more pencillings in the feather (the markings which pass completely round the edge only of the petals), the more they are esteemed and valued. The flamed flowers should have a beam up the centre of each petal, and be also feathered round the edge. Some of these are apt to come with the flame too much confused, which detracts from their merits. The Bizarres, those having yellow grounds, are generally the most esteemed and most numerous. There is more diversity of opinion as to merit in this class than in the others. With regard to colour, the darker or orange grounds with dark markings are in this locality the most esteemed; whilst others prefer the pale gold or still paler yellow, and are not so particular about the colour of the markings, as they are in regard to the purity of the inside. The markings may vary from black to pale scarlet. Here the red Bizarres are scarcely tolerated; why, I am at a loss to say, for I do not see why a Tulip of good form, with a rich yellow ground, exquisite purity, and a beautiful deep scarlet feather or flame should be discarded. Now, if the National Tulip Society would only move in the matter, and adopt two classes for Bizarres—one for the dark and intermediate shades, and the other for red Bizarres, other societies might follow the example; but, like many other societies, the National has in it too much of the old school to make any liberal advancement, and this, with other matters, acts as a drawback to its general utility.

Winton. JOHN WALKER.

AGAPANTHUS UMBELLATUS.

THIS fine old plant is very useful for decorative purposes during the latter part of the summer, and early in the autumn. A well-grown specimen with ten or twelve large umbels of its bright blue flowers is a fine object; and when we consider that the plant is nearly hardy, and of the easiest culture, the wonder is that it should be so much neglected. It is readily increased by offsets. These when potted in any rich earth soon make good plants; they have strong, fleshy fibrous roots, and when these fill the pots the plants should be shifted into larger ones. By giving them plenty of pot room they soon make fine large specimens. They do best out of doors in summer, and in winter they merely require protection from frost and moisture. It is a plant that most people could grow, and winter with very little trouble.

Those who know the plant, and who may possess good specimens of it, would not, I feel sure, like to remove it from their collections to make room for any mere novelty.

Stourton. M. SAUL.

ON THE WATERING OF OUT-DOOR PLANTS.

FEW questions can be more important than that of when to water, and how. Nearly every one professes to answer them easily in an off-hand sort of way, in his own practice, but very few give to them the amount of careful thought they deserve. I was therefore much pleased to read Mr. McBey's remarks upon watering at page 139. All that he says so well is true; and yet I much doubt the wisdom of his conclusion, that the morning is the proper time for watering out-of-door plants in summer. The whole question turns upon the season of watering. All will agree that in either spring or autumn, when there is the slightest chance of frost, the morning is the only time when water can be given to out-door plants with safety; but during summer, when injury from an excess of cold is impossible, the case is wholly altered.

I agree with Mr. McBey that the two acknowledged agents in promoting vigorous growth are Heat and Moisture; but if his paper is carefully read it will be observed that its purport is almost wholly directed to the prevention of any loss of heat. He is not as careful to husband the water, as he is to preserve caloric. Now, the object in applying water to plants is that they may be able to use it. This is well nigh impossible when it is applied to them on the morning of a bright summer day. Prompt as is the action of vegetable life, a thirsty sunbeam is more than a match in speed for a thirsty root or a parched leaf. While these drink up their grains of moisture, the sun has borne away gallons of the water that has just been applied. This, then, is my first objection to morning watering. It causes a loss of, probably, 80 per cent. of the water applied. My second is, that this loss or evaporation takes place at the wrong time, and in the wrong way. The cooling effects of day-evaporation are more injurious to plants than the same effects at night—excepting, always, it is carried to excess at the latter period, and this the average temperature of our summer climate prevents. Day-evaporation is more rapid than night, and therefore a greater amount of cold is actually produced on the evaporating surface during the day than at night; for the cold bears a constant ratio to the rapidity of the evaporation, and it is more than doubtful whether the presence of the sun can compensate the plants for the great and sudden loss of heat sustained by day-evaporation. This loss is also sustained at the worst possible time. Just when the light and heat of the sun are arousing and quickening the slumbering activities of plant life to the utmost, splash comes a deluge of water, and that caloric that was designed to nourish growth is instantly diverted to another purpose—that of the lifting-up and rapid removal of the moisture. Thus there is not simply a loss of most of the water, but a cold chill is given at the time when the warmth was most needed; and from the mere fact that the powers of life seem most active during the day, there can be no question that a day chill is much more injurious than a night one. Hence the burning of wet foliage during bright sunshine is not only identical in its results to a pinch of frost, but may absolutely be the same thing, and arise from an excess of cold originating in the unnatural activity of evaporation. Absolutely as much or more heat may be lost to the plant by morning as by evening watering.

Morning watering has this additional drawback, that it sends away the heat at the wrong time, and the water also before it can possibly be drunk up by the plants. Now, as the object of giving the water was that the plants might use it, it seems reasonable, to say the least of it, that it should be applied under such circumstances as to remain long enough with the plants for them to drink it up. Mr. McBey's morning watering reminds me of wicked boys, bent upon mischief, taking stock out to drink. No sooner do the poor animals get their noses to the water, than whack goes the whip, or down comes the stick on their backs, and they have either to endure a cruel flogging, or go thirsty away. So it is with the plant watered in the morning. While it drinks it has to contend with the sunbeams, and before it has half slaked its burning thirst the water has all vanished.

On the contrary, plants watered in the evening are like the stock that have free access to a clear running stream. They come, and go, and drink their fill, and the full-brimmed brook flows on for ever; and so the plant, watered at night, quietly drinks in the darkness and the silence all night long, filling up every nook and cranny of its structure with a draught so full and sweet that it might have satisfied the gods, until it sinks into slumber bathed in dew, and sweetly, silently rests till the morning. The loss of heat by evaporation gives it repose; and this rest from active exertion, with the attendant strengthening cold bath, are the best possible preparations for a vigorous growth on the coming day.

Another point of great moment in connection with evening waterings is, that any loss of heat that the plant sustains is made up to it by a more copious watering. Nightly evaporation secures the deposition of dew all over the surface of the plant. Daily evaporation only chills the plant, but invites no dew. Hence another great advantage of nightly waterings. The water is arrested as it flies away on the wings of the air, and is brought back to re water, and abide all night with the plants, by the ministry of cold; and thus the cold becomes a watering agency of great potency and ceaseless activity.

And thus Nature teaches us by her nightly waterings of copious dews, by hiding up the sun beneath a thick curtain of clouds during and mostly after rains, the folly of day waterings during bright weather, and the wisdom of evening waterings at all seasons when there is no danger of an excess of cold. Evening waterings guard against a waste of water, give the plants time to consume it, are favourable to repose after the feverish excitement of scorching sunshine, and bring back the water that escapes suddenly and almost at once for reconsumption. The only drawback to all these advantages, as stated by Mr. McBey, is a loss of caloric; but it is extremely doubtful whether that loss is greatest by night or day waterings, and pretty well certain that the loss during summer can very well be spared. It is more a good to be courted than an evil to be shunned; for during dry weather (and it is only then that out-of-door plants require to be watered), the great evil to be guarded against is, not a paucity of heat, but a scarcity of water. That evil, as I have shown, may be more easily met and more readily mastered by watering in the evening than in the morning. Such has always been my practice, and it is sustained by an appeal to science, and sanctioned by a tolerably wide and successful experience.

Hardwicke House, Bury St. Edmunds. D. T. Fish, F.R.H.S.

EXPEDITIOUS PINE CULTURE.

I CAN fully confirm Mr. D. Thomson's statements (p. 123), with regard to growing and fruiting the Pine-apple within twelve months from the time the crown or sucker is detached from the parent plant. I had long since formed the idea that it might be done satisfactorily, but circumstances have till recently prevented me from carrying it out. Now, that I have made an experimental trial, I am able to corroborate Mr. Thomson, when he says it can be carried out as a rule.

Not growing Pines at this place, I was dependant upon a friend for a dozen crowns and suckers, which I obtained in order to try the experiment. These came into my hands last July; they were at once potted, and grown in a structure as unpretending as the routine of culture has been simple, yet complete. The result is, that I have a dozen Queens just colouring, all good-sized table fruit, handsome, and with the pips flat and well filled out. I would advise all who have the opportunity to try the experiment, for if this system can be generally established, I venture to say that the Pine-apple will be as freely cultivated as the pot Vine is now.

I can also confirm Mr. Thomson's previous statement in reference to the cutting-down system inducing the fruiting of obstinate Pine plants. In 1855, while serving my term of apprenticeship at Chilstone Park, I was ordered to cut down a lot of plants that had missed fruiting, in order, as was then thought, to facilitate the production of suckers, but to my surprise the plants started into fruit, and produced some of the handsomest and heaviest Pines we had there. I thank Mr. Thomson for bringing forward a subject of so much importance to the gardener.

Lillesden, Hawkhurst. Thomas Record.

FRUIT-TREE AND PLANT PROTECTORS.

MR. RENDLE is well known to horticulturists as the originator of Tank system of heating plant houses. He now appears before the public as the inventor of a patent Fruit-tree and Plant Protector, which is fully described in a treatise recently published.* We propose now to notice briefly what these protectors are, and to what purposes they are said to be applicable.

The Protectors consist of two parts—a solid durable opaque base, and a transparent top. The base is formed of earthenware, and may be compared to a huge drain tile a foot deep without a top. On either side of the top is a groove to receive a sliding sheet of glass as a lid. This opaque tile, with its glass roof, is the essence of the patent plant protector. The protectors may be placed end to end, for any length on the ground, may form a margin to garden walks, may be fixed to the fronts of houses, may form an ornamental coping to, or give massiveness to the base of garden walls, may hide an ugly fence, or adorn an ornamental one. It will be understood that their form and construction, as well as their size, are to some extent modified to suit these various uses. The accompanying small figure shows the form best adapted for wall trees. For ground vineries a large semicircular form of tile, as shown in the larger figure, with one edge set lower than the other, so as to bring the glass cover to a sloping position, is recommended.

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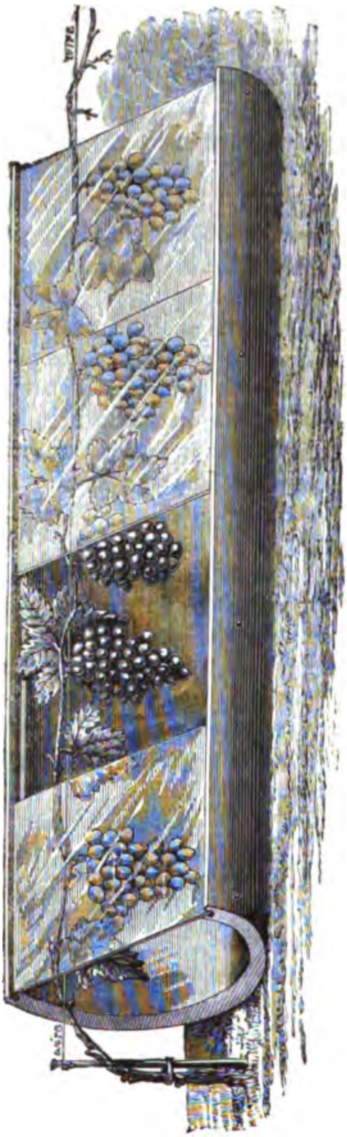
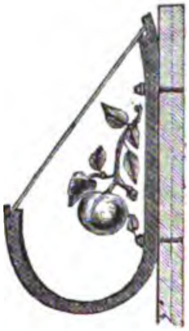
* England a Wine-producing Country: being a treatise on the New Patent Fruit-tree and Plant Protectors. By W. E. Rendle. London: W. Allan & Co., Stationers' Hall Court. 1868. A clearly-written and fully-illustrated treatise, of a highly suggestive character, well deserving consideration by those who are engaged in horticultural pursuits.





As to their uses, it is stated, that with certain modifications of construction, they are to be employed for Grape-growing on a large or small scale, for wall fruits, including stone fruits, Pears, &c., for Strawberry beds, for cordon fruit trees, for early vegetables, for spring flowers, and for bulbs. For growing Peaches and Nectarines the which exist, aided materially by the excessive porosity of bricks, where these are employed, and causing endless trouble, and constant application to keep all clean.

Yet one other remark before I enter upon a *résumé* of varieties worthy of cultivation. It should always be distinctly understood that span-roofed houses are the best for climbers, and indeed are those alone which afford space to afford, by a well-blended contrast, all the beauty they are capable of. In such a form of structure, planted at which end they may be, their upward-climbing tendencies and inclinations of growth may be accommodated. The shoots may be trained across the under side of the roof and if needed, again across, making, as before intimated, the most natural and best of sun-screens, for plants in a somewhat confined atmosphere. Climbers, be it understood, will not grow downward with a tithe of the vigour they are capable of exhibiting in a more natural position.

The following is a list of plants suitable for the stove and greenhouse respectively, and they are plants which I do not hesitate to recommend. Others there are in great variety, many of which I reject, while of some my experience is not sufficient to recommend their being grown in those places where room only exists for a selection of the best.

1. *Stove Climbers.*

Allamanda Hendersoni (true).
Cissus discolor.
Clerodendron splendens, and speciosissimum.
Combretum purpureum.
Dipladenia amabilis.
Ipomœa Leari.
Lygodium scandens.
Passiflora edulis and quadrangularis.
Stephanotis floribunda.
Stigmaphyllon ciliatum.
Thunbergia Harrisii.

2. *Greenhouse Climbers.*

Clianthus puniceus, or splendens.
Habrothamnus elegans.
Lapagerias (rose and white).
Mandevilla suaveolens.
Passiflora Bellotii.
Rhynchospermum jasminoides.
Solanum jasminiflorum.
Tacsonia Van Volxemi.
Tecoma jasminoides splendens.
Acacia longifolia magnifica.
Plumbago capensis.

For back walls in stoves, Ficus repens [stipulata] forms an excellent covering, and is remarkably well adapted, where flowering plants are not in demand. Such are Bougainvilleas, Hoyas, the pseudo-climber Gloriosa, Vanillas, Night-flowered Cereus, Dioscoreas, Echites, and Manettias, &c., are each very beautiful when ably grown; and if cut flowers are needed early, few things afford a more abundant supply when planted against the back walls of such houses than do the old single-flowered Camellias, or insure, when not in bloom, a more uniform furniture, with their deep green leaves.

For greenhouses in similar positions, perhaps Magnolia fuscata (a much-neglected plant) is unsurpassed in the matter of constancy of garniture, and fragrance when in flower. Nor must the lovely Luculias be overlooked. They do well in such positions, together with Pleroma elegans, Camellias in variety, Bougainvilleas, Citrus, Daphnes, &c., which all afford useful variety. In conclusion, I advise all to plant out the Climbing Devoniensis Rose, in a light sunny position. If grown well, it cannot fail to afford a goodly supply of bloom in succession, and to amply repay, with its delicate and delightful fragrance, the trouble and attention expended on its behalf.

Digswell. WILLIAM EARLEY.

SKIMMIA JAPONICA.

THE extreme beauty of this plant during the latter part of the autumn and through the winter and early spring is so great that it needs only to be more generally grown to be appreciated more in accordance with its merits. The plant is perfectly hardy, and in a favourable situation of a compact habit of growth. The flower heads, which expand early in May, are produced in the greatest profusion at the end of each little branch; and the berries set freely, and on the approach of autumn become of a brilliant scarlet colour, in which state they remain until the spring, when through the action of the moving sap they gradually fall off. I consider the Skimmia to be infinitely preferable to the berried Aucuba as a winter decorative plant out of doors, as it is neither affected by frost, nor eaten by birds; and this latter is a valuable property. The Hollies here are often very beautiful in the autumn, but as soon as frost comes on, a week suffices for the birds to strip every berry from the trees, while the Skimmia remains untouched; and, in fact, a more durably beautiful winter plant in the open border cannot be found.

The culture is simple enough. The plants which I raised at this place from seed about 1852, are now several of them 3 feet through and covered with green berries. It will thus be seen that they are very slow-growing, in fact, they do not on an average, grow more than 3 inches a-year, and I am also of opinion that they should be left undisturbed. The seed was sown in a shallow pan, and kept in a cold pit through the winter; the plants potted singly into small pots in the spring, and kept in the cold pit until the following spring, when they were transplanted into a seed bed, where they remained some two or three years, and were finally transplanted to where they are now growing, which is the intervening spaces between some Ghent Azaleas, the beds for which had been prepared especially for them, and consisted of about equal parts of peat, leaf mould, and garden soil, with a trifling admixture of maiden turfy loam, and also in the course of mixing up this compost on the spot, a good portion of the clay subsoil became incorporated therewith, and I am inclined to think with more benefit than harm, for although in my younger days we used to consider that Azaleas and Rhododendrons could not be well grown with a compost of which the greater portion was peat, and in which clay was entirely in-admissible, yet it is strange what a glorious growth can be produced in these plants by a combination of the two.

I have heard it urged that the Skimmia japonica will not bear the full power of the sun, but according to my experience this must be a fallacy, for the plants at this place are exposed to the full power of the sun in the hottest hours of the day, and this leads me to infer that the secret will rather be found in the coolness of our clay subsoil. It is not at all unlikely that with a dry, gravelly, or rocky subsoil, and a light, peaty superstratum, the power of the sun would be too much for the thick, fleshy roots of this plant, which appear to me to be much better adapted to a cool and moist soil, than one which is light and dry. I may add, that having observed several seedlings spring up under the bushes where the soil is undisturbed, I am of opinion that the potting-off is unnecessary.

Redleaf. JOHN COX.

NOVELTIES, &c., AT FLOWER SHOWS.

THE "essentials" of a good *Pelargonium* were, in the opinion of the late Mr. Edward Beck, novelty, freedom of bloom, good habit both of plant and flower truss, and fidelity of colours. To these the critical florist would add form, and so he should; yet a stage of Pelargoniums would be imperfect without some flowers defective in this latter respect, which would be most effective under canvas. It is, however, pleasant to notice that the new Pelargoniums of the present year, as well as of two or three years past, possess large size in combination with form, and the other "essentials." *Lord Ronald* (Foster), awarded a first-class certificate at the Crystal Palace, lacks somewhat the point of form (of secondary importance in Mr. Beck's opinion), but is, nevertheless, a very cheerful and useful flower; it has pale lilac pink lower petals, and dark top petals, bordered with fiery orange, and edged with rose. *Rosalind* (Beck), is a flower of no mean promise, though awarded a second-class certificate only; the lower petals are carmine salmon, with large white throat, dark top petals, margined with pale rose; a finely-formed and smooth flower. The same award was made to *Nonpareil* (Turner), a stained flower, having dark markings on a pale lilac ground on the lower petals, with dark top petals; a very promising flower. *Maid of Honour* (Foster), was awarded a second-class certificate at the first Show at the Regent's Park. It is in the way of Lord Ronald, but paler on the bottom petals, and with the top petals not quite so well marked, yet it is a large and fine flower, produced on bold trusses, but the flowers reflex a little too much. *Heroine* (Foster), awarded a first-class certificate at the Royal Horticultural Society's Great Show, is a beautiful variety, with pink lower petals and white throat, dark blotch on top petals, margined with a fiery hue, and broad pale rosy pink edge; it is fine in flower and truss, and in habit is all that could be desired. *Corsair* (Foster), received the same award at the second Show at the Regent's Park. It is something in the way of Exhibitor, but better, having violet rose lower, and dark top petals, making up a flower of a fine and beautiful hue of colour; the habit exceedingly good. *Cinderella* and *Herald* both received the same award. They were raised by Mr. Foster, and are stained flowers of a very high order. In each case the top petals are finely marked, the dark covering the whole of this division of the flower with the exception of a narrow but regular margin of bright rose. Cinderella is very novel, the dark stains being so regularly and lightly distributed as to give the flower a curious mottled appearance. Herald has showy lower petals of a fiery orange hue, heavily stained with dark; both flowers are of very fine form, and may be termed "great acquisitions."

Some remarks were made at p. 143 on five varieties of Fancy Pelargoniums, shown by Mr. Turner, that had received first-class certificates from the Floral Committee. Of these *Leotard*, *Fanny Gair*, and *Princess Teck* received the same award at the Crystal Palace Exhibition on May 23rd, and also *Belle of the Season* (Turner), a blush flower spotted with fiery rose, and violet rose upper petals; a finely-formed flower and excellent habit. At the Regent's Park *Vivandière* (Turner), received a first-class certificate; it is a large and finely-coloured flower, of a silken crimson rose hue, and will make a fine exhibition kind; being of large size the flowers are subject to a slight roughness, but in point of colour it is fine. *Marmion* (Turner), received the same award; it is a flower of a like general character with Vivandière, but much darker, and quite distinct from it. Certain it is that Mr. Turner has a lot of new Fancy Pelargoniums unrivalled for beauty, form, novelty, and general effectiveness.

Messrs. Downie, Laird, & Laing received seven first-class certificates at the Crystal Palace for Pelargoniums of the Gold and Bronze Zonal section, one that is very numerous and already includes some fine things. The varieties were *Beauty of Kent*, *Magnificent*, *Miss Maynard*, *Stanstead Beauty*, *Black Knight*, *Mr. F. Hohler*, and *Mrs. Lewis Loyd*. Of these Miss Maynard, Stanstead Beauty, and Black Knight are the best and most distinct. *Josephine*, a fine Gold and Bronze Zonal variety, exhibited by Messrs. Carter & Co., received a first-class certificate at the Regent's Park. It has a very lively and effective appearance, and an excellent habit. *May Queen* (Turner), a striking white-edged Pelargonium, received a first-class certificate from the Royal Botanic Society. It will, no doubt, make a capital bedding kind. *Fire King* (Turner), is a fine Nosegay variety, with large trusses of bright magenta crimson flowers, good habit, and well-marked foliage, received a first-class certificate also.

Mr. J. W. Wimsett, of Chelsea, received two first-class certificates for two hybrid *Ivy-leaved Pelargoniums* of considerable merit. The foliage, which partakes in a great measure of the Ivy-leaf character, is stiff and compact. They were raised by Mr. J. Wills, late of Huntroyde, and originated from a cross between the mauve-coloured Ivy-leaved Pelargonium peltatum elegans, which was the seed parent, and a deep scarlet-flowering Zonal variety named Banner, which was the pollen parent. The varieties were *Willsii*, the flowers pale magenta dashed with blue; and *Willsii coccinea*, rosy red.

R. D.

MONTHLY CHRONICLE.

THE Great Metropolitan Exhibitions have, so far, shown no falling-off in quality; and it is gratifying to find that, as in most of them, the extension of time, supposed to be necessary to make them pay, has been adopted, there has been no lack of support on the part of exhibitors. It is however still an open question whether a moderate extension of time, without systematic advertising to reach the masses, is so conducive to monetary success as has been supposed. In the case of the International of 1866, and the National of Manchester, no doubt the success has been mainly owing to the matter being brought early and continuously before the public. The Royal Horticultural Show was remarkable for its Foliage plants and Pelargoniums, the Royal Botanic May show for its Orchids, and the Manchester Show for its Stove and Greenhouse collections. Grand Exhibitions have also taken place at Leeds and York. The Manchester Show realised a profit of £500, independent of new subscribers, the amount received in half crowns and shillings being £1800, and the expenditure £1300.

—— EARLY Peas have again been criticised and compared by the Royal Horticultural Society's Fruit and Vegetable Committee, but the unusually hot dry weather has prevented a thorough comparison of the respective earliness of different sorts. The decisions arrived at were:—That Suttons' Ringleader or Carter's First Crop, was the earliest variety. Nutting's Improved No. 1 was a very good stock, and Wheeler's First Early an inferior stock of the same, which is synonymous with Dillistone's Early, the latter being the oldest name; but, as there are so many spurious stocks in existence under this name, it was thought better to substitute Ringleader, which is better known. Dickson's First and Best is a very good selected stock of Daniel O'Rourke; Taber's Perfection is the same with a little more haulm; Sutton's Improved Early Champion is another good stock of the same, and Poynter's Earliest and Best, and Young's No. 1 are Daniel O'Rourke. Nutting's Multum in Parvo is a first-class Pea with a larger and fuller pod, and of about the same earliness as Little Gem; Sudbury A1 Wrinkled is after the style of Multum in Parvo, as is Nutting's Early Seedling. Nelson's Vanguard is like Early Climax. Turner's Early Emerald is closely allied to Little Gem. Carter's Dwarf Waterloo is an excellent dwarf early Pea, 1½ foot high, allied to, but a great improvement on, Bishop's Long Pod. Laxton's Peas are full of promise, but still require careful selection. Alpha is a fine early variety, with a large curved pod. William I. is the most handsome Pea in the whole collection, very distinct, of the Prizetaker green marrow class, with a fine large pod, and as early as Daniel O'Rourke (= Sangster's No. 1). If this will only retain its present character it will prove a great acquisition.

—— ONE of the most gorgeous shows of Rhododendrons and other American plants ever seen, has been furnished during the past month by Messrs. Waterer & Godfrey, of Knaphill, at the Royal Horticultural Gardens, South Kensington. It occupies, as usual, the monster tent in the eastern annexe, but on this occasion the interior has been totally changed, and thrown into an irregular series of banks and hollows. As floral exhibitions these grand displays of Rhododendrons and Azaleas are really enchanting. We may refer to a few recent kinds of striking beauty which formed part of the show:—Caractacus a rich purplish crimson, with splendid truss, foliage, and habit; H. H. Hunnewell, a dark rich crimson, splendid truss; H. W. Sargent, a magnificent crimson, an enormous trusser, with the catawbiense habit; James Bateman, a clear rosy scarlet, of the most perfect shape and habit; Mrs. John Clutton, of most exquisite shape, and one of the most beautiful hardy white Rhododendrons in cultivation; Mrs. Milner, a rich crimson, a first-rate kind; Purity, a handsome white, with faint yellow eye; Sir Thos. Sebright, a very distinct rich purple, with large bronze blotch, and one which remains a long time in flower; and Stella, a pale rose, with an intense chocolate blotch on the upper petal, a free bloomer. These are all seedlings raised at Knaphill, and, like the other varieties bred in that establishment for many years past, are remarkable for their free habit, fine bold enduring foliage, and close flower trusses.

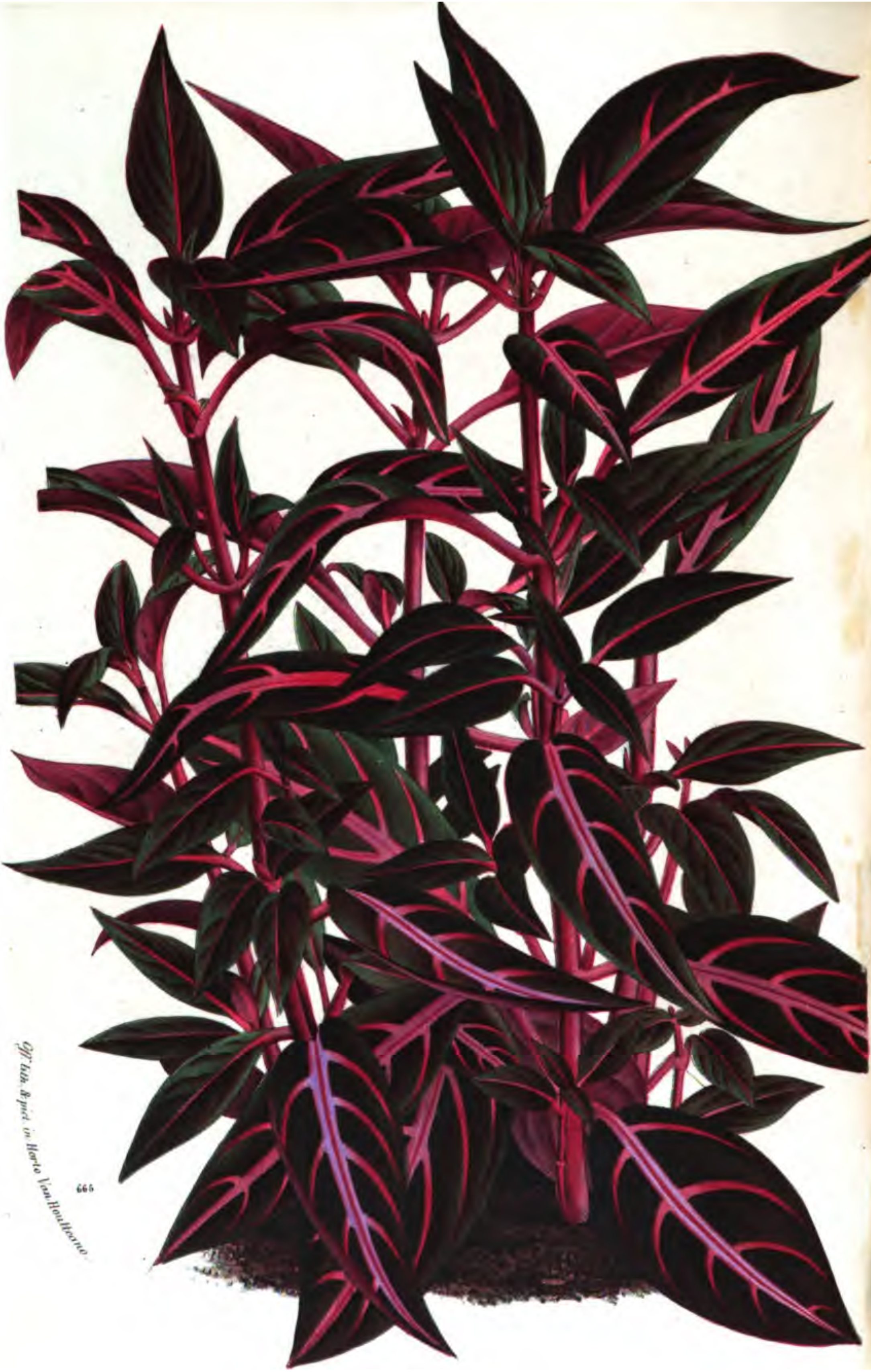
—— THE new Amaryllis Impératrice du Brézil, has recently bloomed in the collection of Mr. Russel, of Mayfield. The flowers have a long tube with the perianth expanding abruptly, as in the case in all the solandræflora section; the colour is a rich shade of lavender, the expanded portion being brightest in hue; the long stamens have the peculiarity of arching backwards, showing abundance of pollen, and the flowers even on this specimen, which has not yet attained the highest point of culture, stand well above the foliage. It is a delightful acquisition, the colour being very scarce among flowers in general, and Hippeastrums in particular. Mr. Sorley has found it a difficult subject, and as an experiment placed it out-of-doors during the summer of 1867, and wintered it afterwards in an intermediate house, and it has rewarded him not only with a spadix, but a promise of a good healthy constitution.

—— THE Trustees of the Lindley Library—an abiding *souvenir* of a great horticulturist and botanist, and of an eminently successful Exhibition and Congress—having now attained their legal status, are desirous of calling the attention of horticulturists and botanists to the excellent nucleus they already possess, and to solicit assistance in the way of funds or presents of books to increase the value of the Library, and to perfect the necessary arrangements for making it available as a free library to all students of Horticulture, Botany, and collateral subjects. Her Majesty the Queen has been graciously pleased to present to the Library a botanical work of the value of twenty-five guineas.

Obituary.

—— MR. NATHANIEL B. WARD, F.R.S., of The Ferns, Clapham Rise, died on the 4th ult., at St. Leonards-on-Sea, in his 77th year. Mr. Ward will be best known to our readers as the inventor of the Wardian Case, an invention which was thus brought about:—In the summer of 1829 he had placed the chrysalis of a moth in some mould in a glass bottle covered with a lid, in order to obtain a perfect specimen of the insect. After a time a speck or two of vegetation appeared on the surface of the mould, and turned out to be a Fern, and a Grass. The bottle was placed in a favourable situation, and the plants continued to grow and maintain a healthy appearance. On reflecting upon the matter, he found that in the bottle the conditions necessary to the life of the plants, as air, light, moisture, were maintained, and the deleterious influences to a great extent excluded. This "Case" gave birth to others; the plan was tested, and after a few years Mr. Ward had the satisfaction of knowing that, through his invention, he had been the means of introducing Nature into the crowded city, and of facilitating the transport of valuable plants to and from different parts of the world. Through the greater part of his life Mr. Ward was associated with the Apothecaries' Society of London, first in connection with its Garden at Chelsea; then as Examiner for the prizes in Botany; then as Master, when he endeavoured to bring the scientific element of the Society into prominence by giving two microscopical *soirées*, which have not since, there or elsewhere, been surpassed; and ultimately as Treasurer. In the memory of those that knew him, Mr. Ward will live as a type of a genial, upright, and most amiable man, an accomplished practitioner, and an enthusiastic lover of nature in all its aspects.

—— DR. WALKER-ARNOTT, for many years Regius Professor of Botany in the University of Glasgow, and the well-known coadjutor of the late Sir W. J. Hooker, and of Dr. Wight, died on the 17th ult., in his 70th year.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IRESINE LINDENI (*Van Houtte.*)

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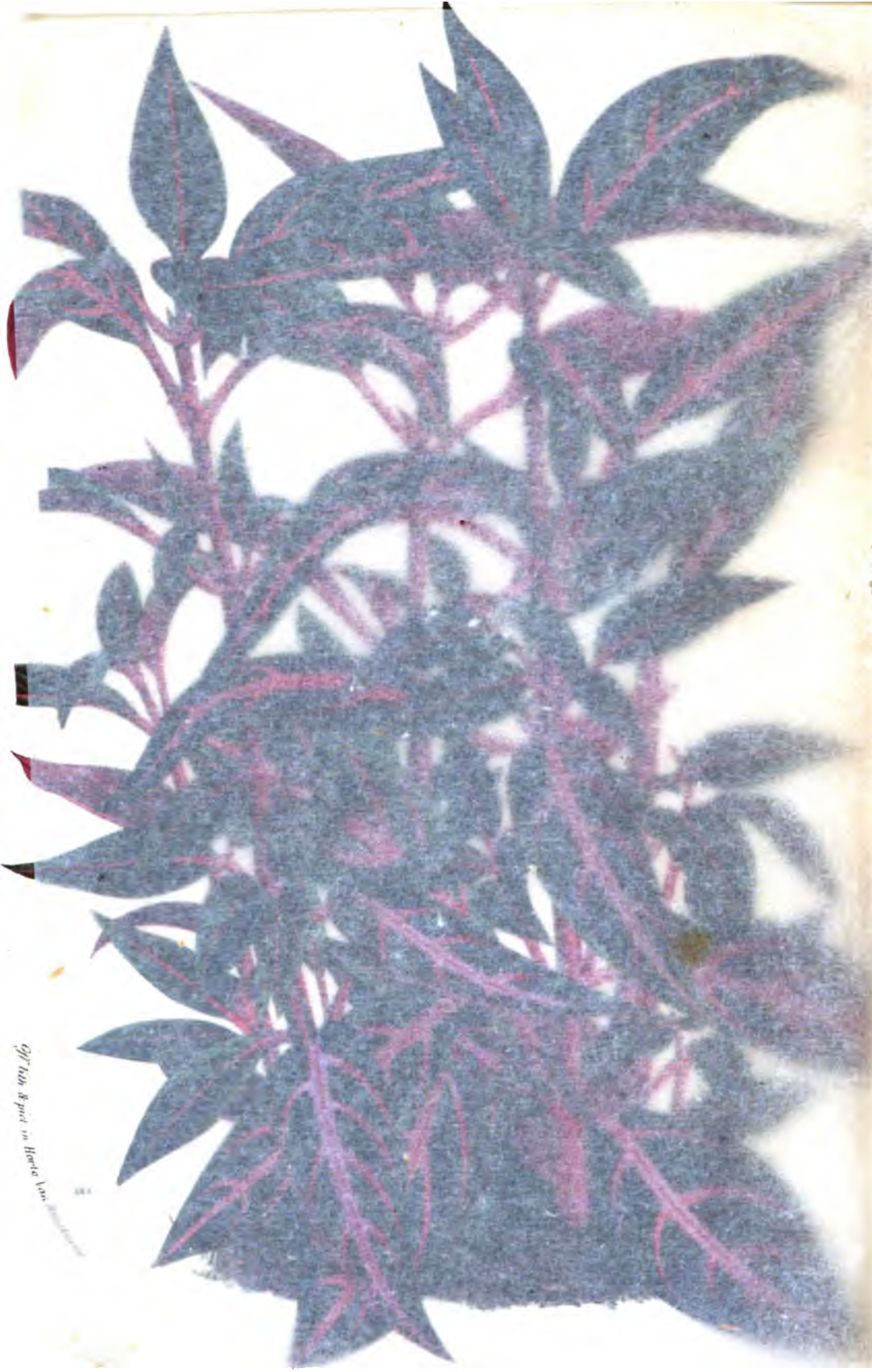

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ESCHAROE 1868

IRESINE LINDENI.

WITH AN ILLUSTRATION.

OF the several species of the Amaranthaceous order which furnish highly-coloured leaves for flower-garden decoration, the plant we now figure promises to be one of the most useful. Its habit is dwarf and freely branched, producing an abundance of twiggy shoots, which are clothed with lance-shaped leaves of moderate size, and of a deep blood-red colour, the midrib appearing as a broad purplish band. This colouring, M. Van Houtte observes, is varied as the foliage is moved by the wind, so that the plant presents different shades of violet, purple, and deep rose, a deep red hue predominating. It is said to grow from about 1½ foot to 2 feet high, and the leaves, as will be seen by our figure, have this great advantage over those of Iresine Herbstii, irrespective of their better colour, that they present a clean, flat, even surface, instead of one which is so concave as to appear distorted.

Iresine Lindeni has been quite recently introduced from Ecuador by M. Linden, by whom it was exhibited for the first time at the great Ghent Show in April last. It has subsequently passed into the hands of M. Van Houtte, of Ghent, by whom it is now being distributed, and to whose admirable chromo-lithographic press we are indebted for our figure.

This new Iresine appears to us a plant of so promising a character for the summer garden, that we have no hesitation in recommending all who are interested in bedding-out, to procure at once the necessary materials for giving a passing trial in the course of the remaining summer months, and for working-up a stock for more extended use another season. In Belgium such experience as there has yet been time to gain in the present season is, we hear, altogether in favour of the plant, which is said to brave full exposure to the sun with impunity, and to produce a very fine effect when used in larger or smaller masses, the plant increasing in vigour and in brilliancy of colouring when fairly established out-doors. Young plants which have been sent over to the London shows, prove it to possess a depth of colour which we have no doubt, under the influences of free growth and bright light, will have an excellent effect.

M.

AËRIAL ROOTS UPON VINES.

THE balance of evidence concerning the production of aërial roots upon Vines is in favour of their appearance being due chiefly to the presence of a warm, moist atmosphere. I say chiefly, because I believe there are other causes. Allow me to relate an instance of the undoubted effects of a moist atmosphere in their production. A year or two ago, in going through the vineries in a nobleman's garden, I noticed in one of the houses where Pines were also grown under the Vines, that air roots were hanging like a beard from one Vine at the end of the house. On mentioning the circumstance I was informed that they made their appearance on the same Vine annually, and the cause was pointed out. A path ran along the back and front of the Pine bed, and across one end. Underneath the bed were several rows of pipes for affording bottom heat, among which water was occasionally poured to keep up moisture. At the end of the bed where the path went round, there was an armhole in the wall for feeling the bottom-heat pipes with the hand, and through this the steam escaped from beneath the bed and constantly ascended against the stem of the Vine in question—indeed, the current of warm moist air from the opening could easily be felt in passing, and the condensed vapour was always visible on the glass immediately above. From the stem of the Vine at the same place hung several bunches of air-roots 2 or 3 inches in length. They also appeared farther up the Vine stem, but became shorter. The Vines were Black Hamburghs, and they were generally started about February, and ripened their crops in July.

To prove that air roots will make their appearance on Vines under the most favourable conditions, I will relate another instance. I planted a new house of Muscats here about sixteen months since, the border is about 22 feet wide, nearly all inside, aërated thoroughly, and made of the best materials. The Vines were planted in April, and by the end of July they had grown 22 feet, when they were stopped; the wood was thoroughly ripened to the top, and when pruned in winter the rods measured generally nearly 2 inches in circumference at 4 feet from the ground, and 1¼ inch at the top of the rafter. They were cut down to within 5 feet of the ground, and were again started last February, and now promise to be more vigorous than ever. Many of the Vines, which were only struck from eyes last year, showed bunches, which when just coming into bloom measured 1 foot in length, and from 8 to 9 inches across the shoulders. I state these particulars to prove that the conditions suit them; yet, although the vinery has been kept but sparingly moist, and regularly ventilated day and night, air roots have made their appearance on the stems—only of a rudimentary description certainly, and in but a few instances, but still they are there; and what I wish to notice is, that they have made their appearance in every instance at the base of the most vigorous shoots, and in most cases at the bottom of the leading shoots only—that is, at the junction between the young and the old wood. Now here the cause is evidently local, and has no connection with the state of the roots, or the border; and I would beg to submit the following explanation as the probably correct one in this and similar cases. The returning sap in its downward rush along the vigorous and fast-swelling young shoots, being slightly checked at the junction with the last year's wood, and favoured by the still and comparatively moist atmosphere of the house, causes roots to be emitted in a manner similar to that which takes place when a young Vine shoot is laid in the soil, and is as much a sign of vigour as of anything else. At all events, I am certain that in the present instance neither a bad border, an excessively moist atmosphere, nor ill-ripened wood, can be assigned as causes; and in proof of this I may mention that one of the canes which was left 18 feet long as an experiment, broke regularly throughout its entire length, and showed from two to four bunches at every shoot to within 1 foot of the ground.

Wortley Hall Gardens. J. SIMPSON.

THERE are many causes which predispose the Vine to generate spongioles upon the stem; in short, anything which checks, injures, or obstructs the free growth of the proper roots will, I believe, tend to create them; but they will not become developed roots, nor even protrude through the bark, unless an over-moist atmosphere be also present. My first particular acquaintance with stem roots was made some years since, when I had part charge of four large vineries, in one of our principal establishments. Each house contained about a score old Vines of various kinds, which had been planted in borders precisely similar to each other; all were started into growth at the same time (March), and they were treated as nearly alike as possible, in every respect. The natural surface of the ground was flat; the subsoil was composed of a heavy, viscid clay, in which an excavation had been made for the borders to the depth of 5 feet, a portion of rubble being placed at the bottom, but no drainage beyond this having been attempted. The borders were composed of strong, tenacious loam, 4 feet deep. The Vines grew as well as could be expected, and produced fruit of medium quality in favourable seasons; but they produced aërial roots, in one house only—Why? Three of the houses were heated by immense flues, with furnaces sufficiently large to contain 5 cwt. of coal at once. One house was heated by a small half-buried flue, with a small furnace; it was also partially shaded by trees and by a wall at one end. The order was, "Give plenty of heat." The consequence was that the three houses were at all times dry, and the one house always damp. No aërial roots appeared in the former, but in the latter they were particularly vigorous and abundant. This appeared to me conclusive evidence that if atmospheric moisture was not the only, it was certainly the chief cause of their origin, and the sole cause of their becoming visible roots.

Afterwards I determined, if possible, to ascertain what particular amount of atmospheric dryness would prevent their growth, yet at the same time prove sufficiently humid, for the healthy development of foliage and ripening of fruit. From repeated experiments and observations, extending over twelve years, I believe that an atmosphere containing from 75 to 80 per cent. of vapour by day, and allowed to become saturated at night, will not only cause Vines to generate, but also to develope aërial roots in abundance; while on the other hand, if the vapour be daily reduced to from 55 to 70 per cent., none will make their appearance, not even if the air is allowed to become nightly saturated as in the former case; nor will any evils result to the foliage from this state of dryness, provided the roots are in a healthy, active state.

I am well aware that these opinions are in some respects opposed to the theory set forth by our great teacher Dr. Lindley, who stated that "The formation of aërial roots is an unmistakeable sign of the *coldness of the border*," and in the experiment which he mentions with the Vine in a nearly air-tight frame, he attributes their presence to the same cause; but I would ask, Would not the excessive vapour which must necessarily exist in a nearly air-tight frame, be quite as likely to produce them? The Verbena and Pelargonium in our flower gardens will occasionally form air roots in calm, moist, mild autumns. Neither coldness nor dryness at the root can be the cause, for the air and earth temperatures nearly coincide at that season of the year. The question, Why are some sorts of Vines more subject to this peculiarity than others? is as easily answered as the one, Why do some require a higher temperature than others? One possesses a hardier constitution, and requires less heat; another is suited to a drier climate, and requires less moisture. The Muscat of Alexandria will thrive well in an atmosphere sufficiently moist to cause the Gros Colman to curl like parched paper when the sun shines upon them.

Wilton House Gardens. THOMAS CHALLIS.

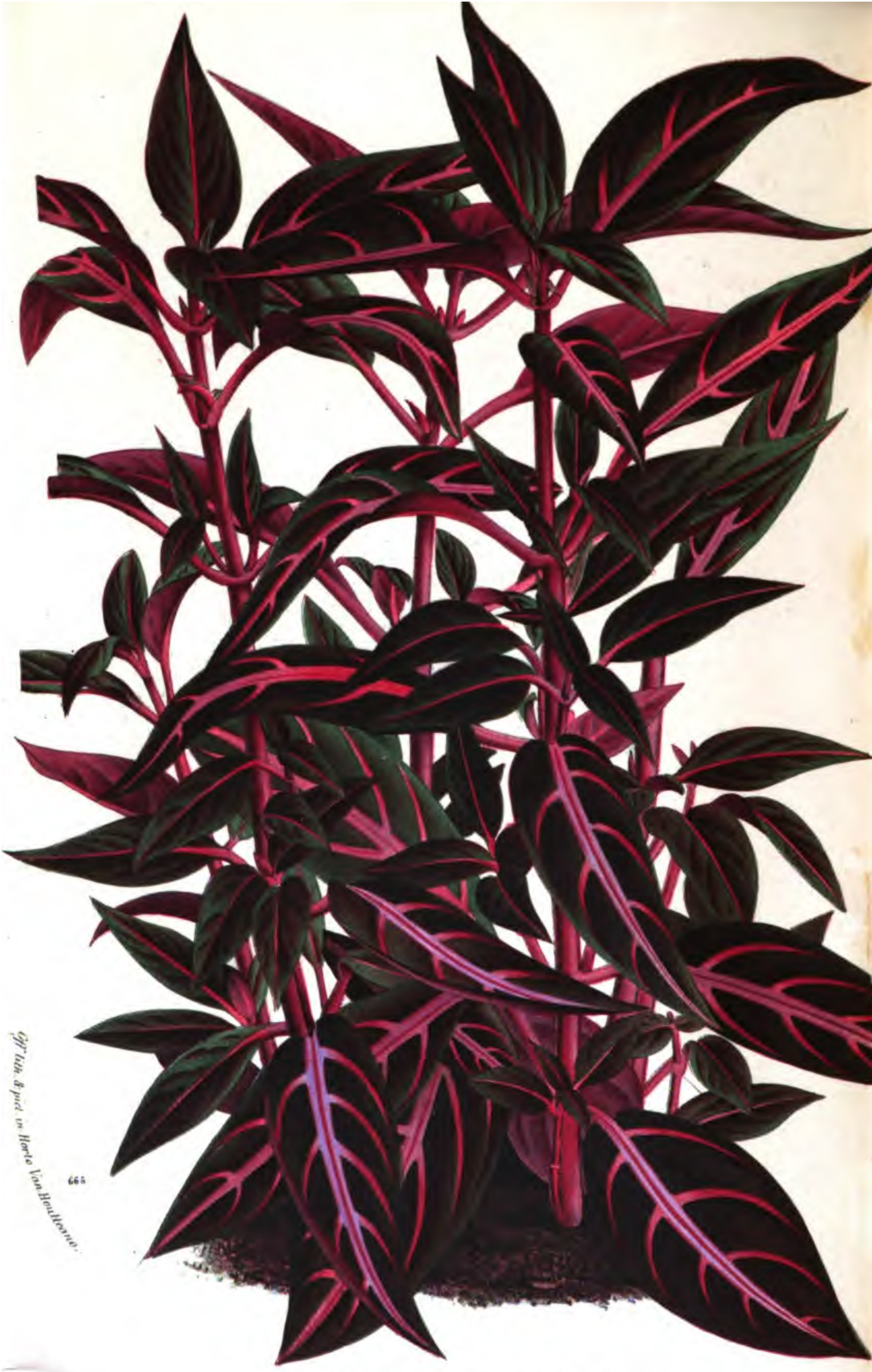
THERE are many things in nature which may be described as to their progressive development, while yet their primary cause remains beyond all human ken. A seed of grass may and will germinate under and upon soil, on polished marble, on a sheep's back, or in a spider's web. Its position is varied, but the moving power is the same; and according to its special peculiarity of position, there must be modifications in the elements of that power to attain like results. Under the influence of light, heat,and moisture, the seed germinates; so in the case of aërial Vine roots, "'tis their nature to" produce them. Their projection may be accelerated by "unripened wood," but it is a fact that they are very often projected abundantly from well-ripened wood; it may be accelerated by "want of reciprocity between root and branch;" and yet it is a fact that they are in other cases minus under the same circumstances, and that they are abundantly produced under a genial spontaniety of action in root and branches. But there is not a doubt that shade with a "warm humid atmosphere," in a stagnant state, and with a weak constitution, is the principal agent in their production. They are as natural to the Vine as any other part of its structure; its system is permeated by their presence, either in an active or more or less latent state. Whatever tends to the debility of the Vine's constitution adds increased power to their vitality; and under artificial and foreign culture this is easily aggravated. The mechanical and chemical composition of made borders must be more thoroughly studied in order to encourage those small rootlets which drink less and carve more than do those fat spongiolets.

Wynnstay. P. MIDDLETON.

THE presence of these roots is due solely to atmospheric heat and moisture, and the border in which they are planted has but little to do with their formation. In a vinery at this place the old Vines are planted in a border outside the house, and not being altogether in a satisfactory condition, I determined to plant some young Vines to replace the old ones without removing them at present—there being sufficient room in the front part of the house to make a border between the hot-water pipes, and the front wall, inside the house. The young Vines were planted in January, 1867, and made excellent growth the following season. When the old Vines are removed it is intended to turn arches in the wall and renew the border on the outside. The border inside in which the young Vines are planted is situated above the level of the floor of the house, and consequently is not subject to great variation of temperature. Notwithstanding this difference of position in which the roots of the young and old Vines are placed, both produce air roots in the same ratio. I have also seen instances of Vines in pots being started at the same time and in the same house as those planted in an outside border, and each alike producing air roots. That some varieties of Vines emit them more freely than others may be regarded as a constitutional tendency, for it is well known to every practical man, that some varieties of different plants emit roots much more freely than others under similar circumstances.

Somerley Gardens. H. CHILMAN.

IN early vineries where ventilation is sparingly permitted, and especially where a quantity of young plants are brought forward early in the season, the Vines will frequently be found to emit rootlets, more or less, according to circumstances; whereas in others started later in the season, from their being more freely exposed to light and air, the Vines may be found comparatively free. The early Grapes here are produced from pot Vines (generally of the preceding year's growth from eyes); they are started in a pit with bottom heat, and are afterwards placed on a stone stage over hot-water pipes, along the back of a Pine stove, which has short back lights. The situation would seem to be favourable, as they are generally very healthy, producing fine crops of good fruit; but even here some rootlets are found; and I have observed, that if we chance to have a two-year-old Vine amongst them, the wood of which ought to be if anything the harder and riper, that it throws out aërial roots quite as freely



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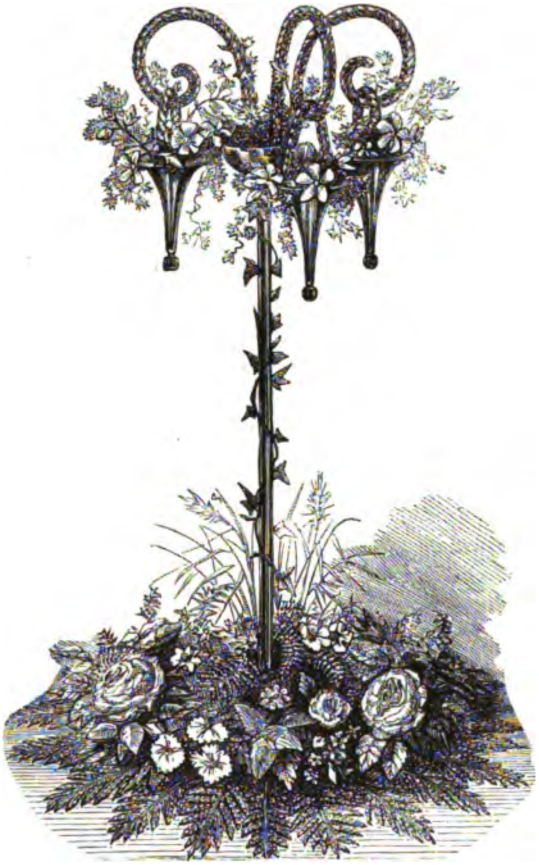
IRESINE LINDENI (*Van Houtte.*)

ECUADOR , 1868.

their stalks resting in the wet sand. The ordinary Fern leaves are as pretty as anything for this purpose, especially the leaves of the Male Fern, bundles of which may be always bought in Covent Garden Market for a few pence, and may everywhere be found in the country. The leaves are often a foot long, but little more than half this length of leaf should project beyond the border of the glass; the leaves should be stripped off the lower part of the stalk, which can then be more easily placed in the sand. Other kinds of Ferns can be used, and many other borders besides Fern, such as Ivy, Holly, Vine leaves, Arbor-Vitæ, Pelargonium, and Rose leaves. The Ferns should be slightly bent, so that the tops of the leaves rest upon the table. The stalks of all border leaves, except Ferns, should be fastened into the sand with common hair pins, such as can be bought at 4*d.* or 6*d.* a-hundred. These keep the leaves secure in case the glasses have to be much moved about after being arranged. The whole surface of the sand should then be



covered with moss. The ordinary kind sold at Covent Garden Market, at 1*d.* a bundle, answers the purpose very well, but it should be fresh and green. Cut off two-thirds of the moss with a knife, leaving only the green tops of the bundles, wet these, and place them all over the sand, and be careful to cover the rim by spreading out the moss. There are other mosses which are still more beautiful, and can be placed in the sand in a growing state, together with small Ferns, and these will last a long time. These are plentiful in the country, but the supply in London is rather uncertain.

Choose whatever flower you desire to form the leading idea in the arrangement. Large flowers, such as Water Lilies, Pæonies, Rhododendrons, Dahlias, full Roses, Camellias, &c., are best adapted for the larger-sized glasses, and six of these flowers will probably be enough for a single glass. The effect must be assisted by mixing in the foliage of the flower used, together with Ivy leaves, Ferns, small Reeds, and any other graceful foliage at command, all which serve to break the flat line. The stalks can easily be passed through the moss into the sand below it. A few taller flowers and buds should be grouped round the bottom of the stem, considerably higher than the others, their stalks resting in the clay or sand, and a branch of small Wood Ivy, or other creeper, should be twined round the glass stem nearly to the top. This should be fastened to the stem, with a turn or two of light covered wire. The hanging baskets at the top should be very lightly arranged with small flowers and Ferns, such as the Maiden-hair, whenever it is procurable, for this elegant plant is lighter and more beautiful than any other foliage, then place a few in the small glass dish at the top of the stem to overhang the glass scrolls. For the smaller-sized glasses, more delicate flowers should be used.

These hints are extremely general, and only intended for persons who have not been in the habit of dressing flowers. They are equally applicable to the glass-handled flower baskets for which the first prize for drawing-room decoration was granted in 1862.

Servants should be warned not to lift the glasses by the stem. They should be taken up by placing the hands underneath the lower dish, and he baskets should invariably be taken off and carried separately. With hese precautions there is no fear of breakage.

ALPINE STRAWBERRIES FOR TABLE DECORATION.

BERRY-bearing plants have been very much sought after of late years for table decoration, and in our anxiety to procure novelties we may perhaps sometimes have overlooked really useful materials already in our possession. I think this may be truly said with regard to the Alpine Strawberry, for what can be more interesting and pretty for the table during December and the two following months, than a few pots of these, nicely fruited, placed in vases or otherwise, according to the taste of the decorator? For this purpose, I select in May or June nice little plants of last year's runners and pot them in 72's; I then plunge them in an open border exposed to the sun, but never allow them to suffer for want of water. They have an occasional watering with liquid manure. The flowers are cut off as they appear, until it is thought necessary to suffer them to fruit. They are transferred to their fruiting pots (48's) in August, and placed with the general stock for forcing. The Alpine forces better than any other Strawberry we have, requiring but little heat to bring it into fruit. An early vinery just started, is a capital place for it.

Oakley Park. W. Robins.

SEASONABLE GARDENING HINTS—AUGUST.

THE long continuance we have had of hot weather and bright sunshine has lately put almost an end to all out-door operations except watering. Mowing machines have for some weeks been laid aside, the grass in most places being very much burnt up. Weeds have with very little trouble been easily kept down. Vegetables and flowering plants have had to be kept continually watered to keep them growing. The sowing of all seed out-doors has required more attention and labour than usual, as has also the transplanting of all kinds of plants.

Plants in pits and frames that have had every necessary attention paid them, have made most satisfactory progress. Shading should only be used now when absolutely necessary for a few hours on very hot bright days, as all young hardwooded plants will now be benefited by plenty of light and air to ripen the wood. On calm mild nights during the whole of the month the lights should remain off. Cinerarias for autumn and winter flowering should now have their final shift. Zonal Pelargoniums for autumn display should also be neatly tied out, but no shoots should be stopped. If shifted last month, they should not need shifting now; but should there be any plants that require it, they should have a small shift.

Towards the middle of the month all the strong-growing, hardwooded, greenhouse plants that have been standing in sheltered shaded situations, should be set where they can have exposure to sun and air on all sides, in order that the young wood may be properly ripened.

It is only in seasons like the present that people in general find out the advantage of deep cultivation in the flower garden. When the soil is shallow the plants soon perish if not kept continually well supplied with water; but when the soil is of good depth, and the roots get downwards, most kinds of plants grow and flourish without being constantly watered. Pelargoniums of all kinds flourish well in hot weather when they have good root-hold. The propagation by cuttings of various kinds of "bedding" plants should now be attended to. Pelargoniums of all kinds strike root freely in the open air. They may be put either into pots, pans, or boxes, and stood or plunged on a south border, or the cuttings may be put into prepared sandy soil at once in the open border. I prefer putting the cuttings in the former, as when rooted the pots, pans, or boxes can be removed under cover, and the cuttings potted on wet days, or at other convenient times. When the cuttings are first put in they should be occasionally sprinkled overhead with water from a fine rose, to keep them from flagging; and in bright sunshine they should be slightly shaded, either by sticking green branches in front of them or by some other means; but at night they should have full exposure. Gladioluses, Dahlias, Hollyhocks, Phloxes, and other tall-growing plants, must be kept neatly tied up. If the weather be dry, these and most other plants will require heavy supplies of water. The early-budded Roses should be looked over and have their bandages loosened; and perpetual-flowering kinds should be kept well watered. If mildew shows itself on any of the sorts, the infected parts should be well dusted with sulphur. Rose cuttings may now be struck very easily on a gentle hot-bed in very sandy soil. As soon as they are rooted they should be potted-off and put back into the frame again for a few days till the roots begin to show at the sides of the pot, when they should be removed to a cold frame and hardened-off.

Should the weather continue hot and dry, constant watering will be the principal work in the kitchen garden, to keep vegetables of all kinds growing. The weather hitherto this season has been very unfavourable to the growth of vegetables on all soils, but particularly on light soils. Every advantage should be taken of favourable weather to encourage the growth of all crops. Frequent hoeing and stirring of the soil, especially after rain, will be very beneficial to them. As Peas, Beans, and other crops finish bearing they should be removed, and the ground dug and planted with something that will come in during the winter or spring. Celery must be kept well watered, and should be earthed-up as wanted. As early Turnips have in many places done badly, a good breadth should be sown at the beginning of the month. A large breadth of Prickly Spinach should also be sown for winter and spring use. All the early sorts of Potatos intended for seed should be at once got up, if not already done, and greened and stored away thinly. Tripoli Onions should be sown at the beginning of the month, and Cauliflowers about the middle of the month.

Strawberry plants for forcing should have every encouragement to grow and form good crowns, by paying proper attention to them now, so as to secure well-formed crowns; the forcing in spring is then a very easy matter. Strawberries have been a heavy crop this season, and the fruit in general very fine; but they were soon over in consequence of the very hot weather; the plants have also suffered much. The sooner young plantations are made the better; all runners should be removed from the old plants, and the soil between the rows should be kept well stirred. If the hot weather has been unfavourable to the growth of vegetables, it has been very favourable for fruit trees. The wood this year, where proper attention has been paid to the disbudding, thinning, and stopping of the shoots, will be well ripened. The trees should all be looked over at once, and all superfluous shoots removed. Vineries should have plenty of air night and day. If cold, wet weather should set in towards the end of the month, fires should be kept on to keep a healthy atmosphere.

Stourton. M. Saul.

THE INFLUENCE OF SUN HEAT ON FRUITS.

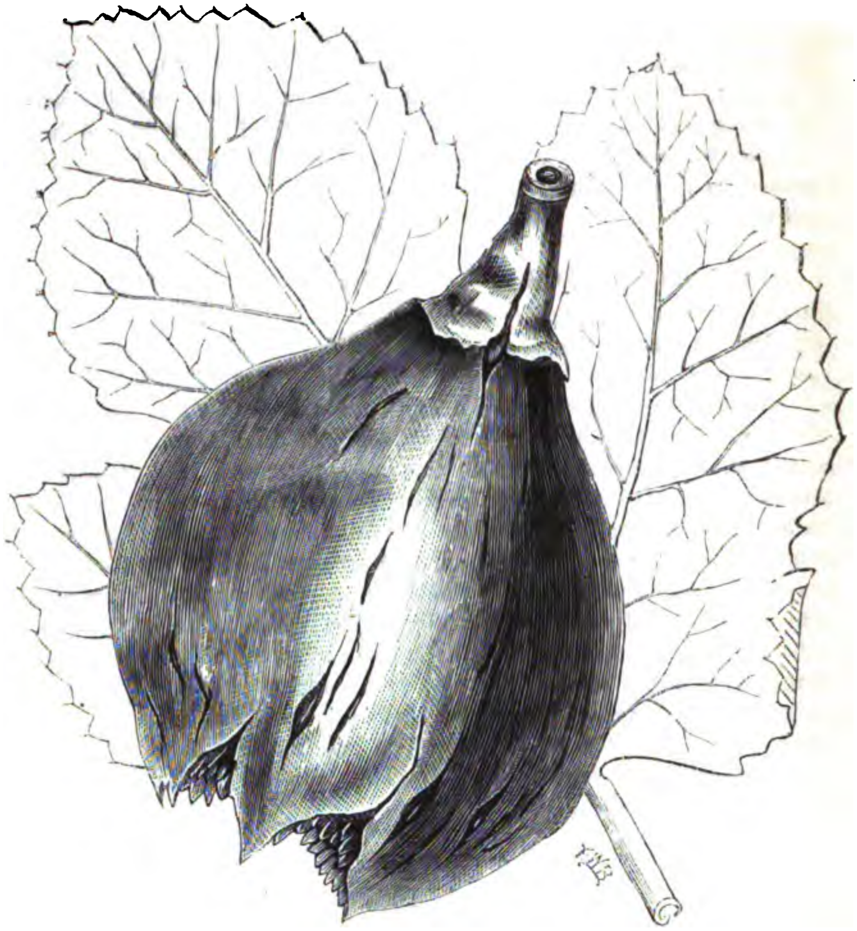
NEVER was there a greater mistake made than that of supposing that fruit produced in the shade has the best flavour. It is a false notion, the mere chimera of half a century ago. The Black Hamburgh Grape is to some extent an exception, for its berries will not colour if the branches are deprived of too many of their leaves, so as to let the sun in amongst the bunches too freely; whereas, the Muscat of Alexandria will not attain its rich amber colour if so much overcrowded with leaves as to keep the rays of the sun from penetrating freely amongst the bunches. A Pine-apple produced in the winter, has not the flavour of one ripened in the summer months of the year, when the sun is powerful. Again, under the old method of planting, Strawberries in beds 4 feet wide the fruit is not to be compared, either in size or flavour, with that of those planted-out in single rows. Now, what is the reason of this? I contend that it is in consequence of the action of the sun upon the fruit. The fruit shaded by leaves will always be more or less insipid and worthless, as compared with that on which the sun has had full play. It is the sun that puts flavour into our fruits.

Heigham, Norwich. James S. Kent.

DE LA MADELEINE FIG.

THIS very early Fig, which is also called Angélique, is one of the earliest varieties in cultivation. It is quite distinct in character and general appearance, and may easily be known from all others by its beautiful clear yellow fruits, and by the peculiar wavy crumpled appearance of the leaves, which are sharply serrated, slightly lobed, and somewhat bristly. It is, however, strangely enough, frequently confounded with the White Marseilles, the fruits of which are of a pale green, with opaline flesh; while the De la Madeleine is of a clear pale yellow, with whitish flesh tinged with rose.

The fruit is of medium size, roundish turbinate, with a short neck. The colour is pale straw yellow; the skin rugose, thin, and cracking in several places lengthways as it ripens. The flesh is white, or pale yellow, tinged with rose, soft, juicy, rich, and pleasant; the seeds large, slightly tinged with rosy pink; the eye small and open, showing the pink tips of the seeds in the interior; and the stalk short.



When well ripened the fruit is of excellent quality, and slightly perfumed. It is a first-bearing variety, and exceedingly well suited for pot cultivation, in which condition it will ripen-off two or three crops in the season. Its great merits, however, lie in its earliness, hardiness, and suitability for open-air cultivation. It is nearly a month earlier than the Brown Turkey—a fact which should not be lost sight of in selections of

Figs for out-door culture, as it is mainly owing to the short duration of our summer season, not the actual lack of heat, that Figs so seldom answer in the open air in this country. B.

CULTURE OF RICHARDIAS.

THESE useful and ornamental plants may be had in flower during the winter months by adopting the following mode of treatment. Bring the plants to rest early in summer, by exposing them to the sun in the open air, and gradually withholding water until properly dried off. Afterwards store them away where they may be protected from rain. Towards the end of August the first batch may be started into growth. Be careful to select those roots that went earliest to rest; carefully clean the rootstocks from decayed matter, and repot in a rich turfy loam, with a sufficiency of sand and pieces of charcoal to keep the compost open. Give a good watering, and expose them in the open air. As the season advances they will require the protection of glass; but take care to fully expose the plants near the glass to the full action of sun and air, so as to maintain a sturdy and compact growth, for on this, in a great measure, depends the effectiveness of the leaves, which are arrow-head-shaped. The old R. æthiopica is more particularly liable to get stalky and attenuated in growth when not fully exposed; water freely, and place the pots in pans kept full of water. R. albo-maculata is a particularly effective variety; the leaves are arrow-head-shaped, of a lively green colour, and distinctly marked with oblong white blotches parallel with the nerves, and the flower spathe is white. It is a native of Natal.

By adhering to the foregoing directions, a succession of these showy plants may be had in flower during the whole winter, at a time when other flowering plants are scarce. I may add that these plants deserve cultivating more extensively, being of the greatest service where flowering plants are in demand during the winter season.

Witley Court. GEO. WESTLAND.

STANDEN'S MANURE FOR CUCUMBERS.

IT has occurred to me that gardeners in general ought to be made aware of the great benefit to be derived from the use of Standen's Gardeners' Manure as a renovator of Cucumbers exhausted by overbearing. I have used it this season with a success which was beyond my expectations. Five small lights with one plant in each, two of them of the sort called Lord Kenyon's Improved, and three of Masters' Prolific, commenced to bear the latter end of March, and have afforded a continuous supply to the present time (July 15th), and are still very healthy, and in full bearing.

About the middle of May they began to show signs of exhaustion, and a deficiency of young vines. I had them therefore well cut back and thinned out; they were then watered with a solution of Standen's manure, in the proportion of one thumbpotful dissolved and mixed with four gallons of water; the lights were closed and left all night; the next morning a copious application of pure water was given, and the lights again nearly closed and shaded from bright sun. The plants started immediately into most luxuriant growth and full bearing. They were again treated in a similar manner the first week in July, and are now as luxuriant and fruitful as ever, and apparently as well able to answer to the treatment, until it becomes a matter of policy to destroy them. There is another pleasing thing connected with them—they have been from the first perfectly clean and free from insects. In former years I have frequently been obliged to uproot and destroy the crops, owing to the prevalence of an aphis so tenacious of life that a fumigation sufficient to kill it, killed the plants also. How far this immunity from the pest may be due to the use of the manure can only be proved by further experiments.

Redleaf. JOHN COX.

THE ROYAL HORTICULTURAL AND ROYAL BOTANIC SOCIETIES OF LONDON.

IN presuming to offer a few remarks on these Societies, we wish it to be distinctly understood, in order to prevent misconception, that we are not in the secrets of the Council of either of them, and can therefore only comment on so much of their proceedings as is public, and open to all who are willing to observe and read. Further, we are prompted to the task solely by our own reflections, which lead us to think that, considering the utility of these institutions and their indefatigable and usually well-directed efforts, they do not receive that amount of sympathy and support from the public to which they are fairly entitled. If we succeed in establishing our views, we shall hope also to succeed in drawing towards them a more liberal support, and it is for this purpose that we are induced to bring the subject under the notice of our readers.

The utility of these Societies may, we think, be established from three points of view:—1, Their gardens are a delightful resort for the families and friends of those who reside permanently or occasionally in the metropolis. 2, They are by their displays of fruits, plants, and flowers, both in their gardens and at their great exhibitions, the means of spreading a taste for botany and horticulture; and 3, To them we are largely indebted for the superior quality of the fruits, flowers, and vegetables met with in our own gardens and on our own tables.

Let us for a moment suppose a very improbable but still possible state of things, that either or both of these Societies should collapse for want of funds, what a blank would be left in the enjoyments of the London season! Apart from the brilliant *réunions* they call forth—the flower shows, occurring at fixed periods, the comparative retirement, the refinement, and beauty of the garden would have to be exchanged for the publicity, the less-cultivated scenery and society of the parks. Would not this be a great drawback to the pleasures of thousands of heads of families, of their children, and of their friends? We think so; and serious as the loss would be to the metropolis, it would prove even a greater loss to the horticultural community throughout the country. There is a prestige attaching to horticulture through the independent and non-commercial character of these Societies, which raises the profession, floats more capital, and gives employment to more hands, than could be effectuated by any purely commercial establishment, however vast and well-ordered. Imagine a few London nurseries taking the place of these chartered Societies as the heads of horticulture! We apprehend that under such change the interest of the landed and monied classes in horticulture would be greatly diminished, the value of the nurseryman's stock would in consequence be depreciated, and the practical gardener's independence of nurserymen would be jeopardised. Although we are sure that nurserymen are always pleased to see visitors at their nurseries, whether purchasers or not, knowing well that business usually follows visits of inspection, yet there is a sense of freedom in having the right to enter a beautiful garden on the presentation of a card, to wander at will without question or interruption, which, to many minds, is more fascinating in prospect, and more enjoyable in fact, than a visit of inspection to the most renowned nursery, even under the guidance of the politest or cleverest of cicerones. We need scarcely point out to the nurseryman, that not only does he derive benefit from the mere existence of these Societies, but there is no other way in which he can place his productions so favourably before the many lovers of gardens and gardening, as by exhibiting at the London flower shows. Finally, the practical gardener must be well aware that his position is raised, and his remuneration increased, by the spirit of rivalry evoked by these exhibitions. Rich people, as a rule, like to have the best of everything, including flowers, fruit, and vegetables; by means of these exhibitions his abilities, if he have any, are fairly made known, and the value of his labour naturally rises in the market.

If by these few remarks, which by no means exhaust the subject, we have succeeded in showing that it is the interest of the privileged classes, of the nurserymen, of the practical gardener, that these Societies should not only exist, but flourish, we doubt not that these classes will do their utmost to uphold them. The ground of interest alone may be low ground to take, but it is enough for our present purpose. We would say to the rich—SUBSCRIBE, and canvass for subscribers; to the nurseryman and gardener—Subscribe if you will, but EXHIBIT, and take every convenient opportunity of placing the claims of these Societies before the cultivated and wealthy with whom you come so much and so frequently in contact.

P.

REMINISCENCES OF OAKHILL:

HOW WE LEARNED TO GROW GRAPES AND PINE-APPLES.

AMONG the noted gardens in the vicinity of London thirty years ago, one very humble outsider forced itself into notice by producing fruit of superior quality, particularly Grapes and Pine-apples. This was the garden attached to the country house of the late Sir Simon Clarke, Bart., at Oakhill, near East Barnet, in Hertfordshire. Sir Simon had large estates in the West Indies, and having tasted the luxuries of that charming climate, he resolved to grow exotic and other fruits at home, altogether regardless of expense. With this object in view he got Mr. Lee, of Hammersmith, to send him the best gardener he could find, and the late Charles Dowding got the appointment. Dowding was a man over 6 feet in height, and being no idler, being, moreover, like one mounted on stilts, he could travel with apparent ease, at a pace that his followers had to match with a trot; while Sir Simon, like the hero of the Nile, expecting every man to do his duty, had the greatest confidence that his gardener was not only willing, but able and admirably qualified to superintend. But some one may say, What have long legs to do with Pines and Grapes? Gentle reader, bear with me, and you shall hear that the accident of one of Mr. Dowding's long legs breaking down, became the turning point of the successful Pine and Grape culture in that garden.

Sir Simon and his gardener had visited the best gardens about the home counties to get the outlines of their work. It was evident that the baronet was to be in a great measure his own architect, while he employed a first-class builder to carry out his views. The soil of the garden, or as we may term it the raw material, was as stiff a sample of brick earth as ever was made into pug, and this bed of clay cropped out over a substratum of yellow gravel, where water was easily got at some 5 or 6 yards deep. The houses were built upon the lean-to principle, and were partly heated by hot-water pipes, and partly by fire flues. They stood on high ground, and for all practical purposes it may be said that they faced the south openly, but had considerable shelter from trees on the north and west.

Mr. Dowding having met with an accident by which one of his legs was so seriously injured, that he was confined to his bed for some weeks, had to find an experienced gardener to superintend, and Mr. James, who had retired, and lived in the village of East Barnet was sent for, and immediately entered upon this duty. Mr. James was a man of note, whose lot in life had been cast among well-grown fruits and flowers; and, although he had been a successful cultivator and had made money by it, his merits had not been appreciated, and his star had risen and seemed likely to set unseen by the world. Like some old soldier, being hale and hearty, he was soon girt for the combat, and as there was no stint of means he resolved to set things to rights in good earnest. Suffice it to say, that in the absence of the regular gardener everything was vastly improved, and Mr. Dowding had the good sense to follow the example that had been set.

The Pine-apple plants that had been plunged in warm tanner's bark up to the brim of the pot, were mounted on the top of a burning heat, and only let into the tan bed about 1 or 2 inches; and as the heat below was increased, so also was the top heat, and all the light that could be got was let in, for the sashes were glazed with clear crown glass, and had thin copper styles, and these sashes were not only regularly washed but really kept clean, as much so as if they had been shop windows. The consequence of all this was, that much time was gained in the fruiting of the Pine-apple, for if the plants did not grow rapidly they had but one alternative, and that was to be roasted alive. Mr. James's plan was always to accompany the supply of artificial heat with all the light he could get, and with a large amount of evaporating surface; I need, however, scarcely remark that during the flowering season, as well as during the ripening season, the atmosphere of the fruiting Pine houses was decidedly a dry one. Pine-apple plants treated in this way would take an amount of manure water at the roots that could scarcely be credited. The strain upon the heating apparatus was lessened by covering the glass at night with neat sashes of reeds 2 inches thick; this not only kept out the cold, but kept the glass dry, and thereby saved the loss of heat by evaporation. The actual amount of fire heat by night was very little indeed, for it was never considered desirable to fire much in the dark, but in the early part of the morning, firing was quite a different affair, for Mr. James, like Tom Moore, thought that "the only way to lengthen his day was to steal a few hours from the night." If there was any one thing done better than the rest, it was the preparation of the tan bed, for the bark was all well housed in a shed, turned, dried, and heated, before it began to do duty in the Pine stove. The old school of good practical gardeners thoroughly understood fermentation, whether with horse droppings for Mushrooms, with stable litter and leaves for hotbeds and linings, or with tanner's bark for Pine stoves.

But I hasten to the Grape culture, as that was the attraction that drew me there, and first brought the garden into public notice. When I got there, I found the family in mourning, for Sir Simon was dead, and the reins of government were in the hands of the good and amiable Lady Clarke. Mr. Dowding had got on his legs again; and as the garden had now to pay its own expenses, which it did handsomely, and that of the farm as well, it is easy enough to see that this was now no place for either the gardener or his assistants to play the fool; and the issue showed that all hands did their work not only wisely and well, but willingly. And the Grapes grown there for many years after the decease of Sir Simon, and of Mr. Dowding, were second to none in England. For the honour of the deceased baronet, let me say that he paid his men handsomely. The Vines were trained generally with a single rod in the centre of each light, and as nearly as possible 16 inches from the glass. In pruning, the Crawshay system of cutting off all the laterals, as if for bravado, was not adopted, but one eye was left on each very short spur; and when a house of Vines had been got ready for starting, and had been duly coated all over with a solution of common soft-soap and black sulphur (sulphur vivum), diluted with enough water to render the mixture a stiff jelly when cold—the mixture being duly laid on with a common paint brush whilst a little warmer than the hand—the Vines were all laid level on a tan bed in the middle of the house, in order that they might break evenly, and, that whatever heat they did get might be thoroughly moist, the atmosphere being an imitation of a reeking swamp. Had a stranger intruded on the culture at this stage, he might have had confused ideas about the sanity of the party who superintended, as one had to creep about among crooked sticks, apparently thrown in the greatest disorder. I very carefully noted down in my diary the whole course of culture applied to the Grape Vine at Oakhill, and the late Mr. Loudon published it in his "Gardeners' Magazine," where it will be found *in extenso*. I need therefore, neither abridge nor repeat what is already in print, as my object now is to supply an historical link which only myself, or Mr. John Davis, my kind friend and companion there, could do.

Islington Square, Salford. ALEX. FORSYTH.

NEW HYACINTHS.

THE new varieties of Hyacinths have been plentifully shown during the present season, though, as in the case of other flowers, the new introductions are not always improvements on existing kinds. The best our exhibitors can do is to obtain the very best flowers possible; and though as an invariable rule the class for new kinds does not furnish such fine flowers as those for older varieties, it is, nevertheless, one of considerable interest for the florist.

I propose to group the new flowers according to the shade of colour, in order to give as clearly as possible some idea of their relative value. The best flower of the year is a yellow, called *King of Yellows* (W. Paul), perhaps in point of colour the best single yellow Hyacinth in cultivation, and having well-shaped bells of a deep citron hue; the spike is close and good, and the habit excellent; awarded a first-class certificate. *Luna* (Cutbush), is also a single yellow in the way of Ida, but slightly darker, the bells stouter, and more rounded. *L'Or d'Australie* is a slightly deeper form of Ida, the spike, however, neither so fine nor so symmetrical.

Prince Albert (Cutbush), is a fine addition to the double blue class. It is something in the way of that good old flower Laurens Coster as to build, but has the fine dark glossy hue of the single General Havelock; the colour is a deep glossy dark purple, and the flower is quite distinct in character. *Von Siebold* (Cutbush), is a pale form of that fine single variety, King of the Blues, but being whiter in the centre has a more lively appearance. *Vulcan* (Cutbush), is a single variety of a glossy black shade, like Prince Albert, but no better. *L'Espérance* (W. Paul), also resembles King of the Blues, but is paler, and has more white in the centre, and yet differs from Von Siebold just noticed. *Clio* (W. Paul), is a very pleasing single blue variety in the way of Lord Palmerston, with more colour in the tube, though with less in the segments, and having a whiter centre; the bells are stouter, and of a better shape, but the spike as shown was small and ill-shapen; awarded a first-class certificate. *Lord Derby* is a darker form of Lord Palmerston, but not so good as Clio. *Amazon* is much in the way of Marie, but with a paler centre, and not so good.

The light blue flowers are very plentiful, and consist in the main of pale-coloured flowers in the way of Princess Mary of Cambridge. Of these first-class certificates were awarded to *Grand Monarque* and *Couronne des Bleues*, both from Mr. Paul. The former has the exterior of the segments stained with pale violet instead of azure blue, as in the case of Grand Lilas. Couronne des Bleues is a pale form of the last-named, the shape of the bells and build of the spike being the same; the bells are large, well formed, but not plentiful, and the foliage is so tall and rank as to almost entirely obscure the spike. *Byron* (W. Paul), is another pale flower, rather darker than the two just described, the bells not quite so massive in appearance, nor the segments so broad. *La Grande Ressemblance* (W. Paul), is another, perhaps best described as an improved La Grande Vedette, the bells finer, and the spike larger and better set. *Marge* is another of the same type, but a fine and striking flower, with pale greyish azure blue bells, large, stout, and well formed, making a handsome and commanding spike. *W. E. Gladstone* may be best described as a pale form of Charles Dickens, but not so effective. *Marcel* is but the other self of Grand Lilas, but being also suffused with pale violet, it has a darker appearance. *Delicata* is a very pale form of the old double blue flower Madame Marmont, but with finer and better-formed bells.

Autocrat (W. Paul), awarded a first-class certificate, is a promising addition to the single mauve class, and when seen appeared capable of being produced much finer; resembling to some extent Feruk Khan, it is yet of a livelier hue, having more of reddish violet in the prevailing colour, while the segments have a perceptible stripe of black along them; the bells are small, but well formed, and set closely on the spike. *Jescho* (Cutbush), has a reddish mauve tint, the segments margined with a pale tint, small as shown, but a nice bright-looking flower, and shown fine last year at Amsterdam. *Charles Dickens*, a mauve-coloured variety, similar to Prince of Wales, is of a pale reddish hue, the bells small, the spike close and compact.

Prince Alfred (Cutbush), is a single red variety of a deep rose colour, something in the way of Von Schiller, but deeper and yet brighter in hue, of a pleasing shade of colour, and a promising flower. *Eclipse* (W. Paul), is a lively single red variety, but as shown not first-rate. *Mirandoline* (W. Paul), is a single red kind, like Von Schiller, but darker, and having the same shape of bell. *Sadowa* (Cutbush), is in the way of Florence Nightingale, of a deeper hue of colour, but the spike not so good. *Agnes Sorrel* and *Orange Boven* are two rose and nankeen-coloured varieties, produced from Duc de Malakoff; the former has the deepest colour, but both are very pretty and novel, and form good spikes.

Of white flowers *Bijou Céleste* (Cutbush), is a small form of the huge-belled single white variety Snowball; the bells are smooth, well shaped, and of the purest white. *La Grandesse* is in the way of Mont Blanc, but with larger and better bells. *Michael Angelo* is an improvement on that fine but uncertain single white variety, Madame Van der Hoop, and produces a larger, fuller, and more reliable spike. *Van Hoboken*, double white, though not new, is rarely seen because so unreliable; the individual bells, though good, are loosely hung on an irregular spike.

Many pretty novelties in early Tulips have also been seen, but these must be reserved for a further paper. R. D.

ALLAMANDA GRANDIFLORA.

THIS, the best of all the Allamandas, is of comparatively easy culture, providing it is worked on Allamanda neriifolia. A young healthy plant started into free growth at this time, would form the foundation for a nice specimen for blooming next summer. If well rooted it should immediately be shifted into a pot one or two sizes larger (according to the strength of the roots), using a compost of one-half leaf mould, one-fourth loam, and one-fourth made up of equal portions of peat and silver sand, all being mixed well together. Provide ample drainage, above which place some rough fibry peat or leaf mould to keep the drainage from becoming choked. Pot moderately firm, and place the plant in an ordinary stove temperature, near the glass. Syringe night and morning, and attend well to watering up to the end of September; water should then be gradually withheld until the foliage is off, after which just sufficient water should be given to keep the ripened wood from shrivelling. About the beginning of February turn the plant out of the pot, and reduce the ball as much as can be done without injury to the roots; and repot in fresh compost such as that before recommended. Place the plant in a temperature ranging from 60° to 70°; use the syringe freely, and be careful to keep the ball in a proper state as to moisture. The plant will soon break freely, after which manure water should be given. As soon as the plant gets into free growth, a liberal shift will be required, after which it will soon throw out laterals from the new growth, and produce abundance of its beautiful pale yellow blossoms for weeks in succession.

Somerley Gardens. HENRY CHILMAN.

NOVELTIES, &c., AT FLOWER SHOWS.

SPECIMENS of *Clematis*, trained to shape and growing in tubs, form certainly novel features at flower shows: yet, at the meeting of the Floral Committee on the 7th of July, they were admirably illustrated by Messrs. G. Jackman & Sons, of Woking, who contributed grand examples of four of their new hybrid varieties so grown—viz. *Magnifica*, *Jackmani*, *Alexandra*, and *Rubella*, as well as a specimen of *C. lanuginosa candida*, a beautiful white variety. It is to be hoped that at no distant date, a class for Clematises grown in tubs will find a place in the schedules of the large summer shows, as they would form a fine feature, as well as supply hues of colour much wanted in large exhibitions. First-class certificates were also awarded to cut blooms of the following new kinds—*Sir Robert Napier*, bright reddish blue, with a white band along each segment; and *Beauty of Surrey*, pale blue; two varieties that mark a great advance towards a bright blue Clematis. A similar award was made to a splendid seedling variety of *C. Viticella*, named *rubra grandiflora;* the colour, a lively plum-red, and with improved substance in the segments.

Messrs. Carter & Co. won a first-class certificate for an excellent Gold and Bronze Zonal *Pelargonium*, named *Black Prince*, having a broad reddish chestnut zone on a golden leaf-ground, the habit compact and regular, and the character well maintained on the oldest leaves; and a like award was made to Messrs. Downie, Laird, & Laing, for another of the same class named *Red Ring*, with a bright chestnut zone on a gold leaf-ground, and broad golden edge, a very promising variety. First-class certificates were awarded to the excellent silver-edged variegated Zonal *Pelargoniums*, named respectively *Lass o' Gowrie*, and *Mrs. John Clutton;* the former from Messrs.

E. G. Henderson & Son, the latter from Messrs. J. & C. Lee. The former has the brightest-coloured leaf marking; the latter has the advantage of habit, being a more vigorous grower, and yet forming a nice shape. Both promise to make effective bedders, having more strength of constitution than is generally found in the silver-edged variegated Zonals. *May Queen*, a fine white-edged *Variegated Pelargonium*, from Mr. Turner, of Slough, also received a first-class certificate. It is remarkable that the green leaf-ground is of an unusually dark hue, while the white edging being pure, gives the plants a very lively appearance. In point of growth it is all that could be desired, the habit being short-jointed and symmetrical. *Flower Queen*, another of the same class, from Messrs. E. G. Henderson & Son, received a second-class certificate. The leaves are very large, and have a broad edging of white; but as shown, the habit had a delicate appearance, as if lacking vigour of constitution.

Two fine *Nosegay Pelargoniums* have been awarded first-class certificates—viz., *R. K. Bowley*, from Messrs. Downie, Laird, & Laing; of a deeper and brighter hue of colour than Le Grand, having brilliant reddish scarlet flowers much dashed with orange, and large symmetrical trusses; and *Lizzie*, from Mr. Geo. Smith, Islington, a novel-coloured variety, having a compound of bluish, salmon, and orange, good trusses, and habit.

Double Pelargoniums appear to be multiplying with rapidity, though variation of colour does not keep pace with diversity of name. Both Messrs. E. G. Henderson & Son and Mr. William Paul have received first-class certificates for *Madame Lemoine*, a flower of a very pleasing and soft shade of rosy pink. At a later date, *Surpasse Madame Lemoine* was produced, and with the exception of being a little paler in colour, did not differ from the foregoing. *Rose Queen* (Hally), is very like Gloire de Nancy; *Pride of Lee* (Hally), is of a rather deeper colour than the last-named; *L'Hermite* (Bull), is of a pleasing shade of rosy scarlet; and *Triumph* (Bull), bright orange-scarlet. A white-flowered variety would be very acceptable, and several cross-breeders are reputed to be hard at work in the endeavour to produce a double Pelargonium with white flowers.

R. D.

ON SEEDLING GRAPES.

AMONG the many new Grapes sent out year by year there are few, if any, that do not possess some quality peculiarly their own. Judged by this peculiarity, which has brought it into notice, there can be no difficulty in pronouncing each of them "a Grape of excellence." It is only when they come to be grown side by side under the same circumstances, and judged of as a whole, that we again turn a favourable eye to the older varieties, which have so often proved our fast friends.

Some years ago, after the introduction of the hardy Grapes of North America, it was anticipated that a new race of hybrids might arise of a more hardy nature than any we at that time possessed. It was pointed out how near perfection the Grape Vine can be brought in the southern counties of England by out-door culture, and that the leap was not great that would give us a hardy Grape suitable to our somewhat variable climate.

Four years ago I procured from a well-known respectable firm what was stated to be the Strawberry Grape Vine of Canada, this being supposed to be one of the best of the native American Grapes for hybridising. Two seasons passed, but I was not able to get a show for bloom; in the third a small bunch showed itself, which was carefully impregnated with a Black Hamburgh. A cluster of small Grapes which, with the exception of two berries not much larger than Peas, was ripened. These two berries swelled well and had all the appearance of fair-sized, well-bloomed Black Hamburgh Grapes. On eating them they had a good deal of the flavour of the Hamburgh, but on this I only wish to say—they tasted as fair good Grapes ought to do. The remainder of the small berries on the bunch were perfect as Grapes in appearance only, the taste being like vinegar. Seeds were contained in most of the smaller berries, but no care was taken of them; one of the large berries had no seeds, the other had two, one of them imperfect; both were sown immediately, and now we have as produce one plant above a yard high, showing itself to be a distinct hybrid. To me it would be important to know what kind of fruit this Strawberry Grape of Canada produces. Knowing this, we might form some idea how far the fertilising properties of the Hamburgh have affected it. Speculation I know can write pages on the facts I have just stated, and not on these alone, but on what may be expected from succeeding generations; but actual experience or deductions from well-known facts would encourage, or perhaps qualify others to try what can be done, and if success should one day crown the labours of some fortunate experimentalist, the trouble of attaining it would be well rewarded.

Southend Gardens, Darlington. JOHN RICHARDSON.

MONTHLY CHRONICLE.

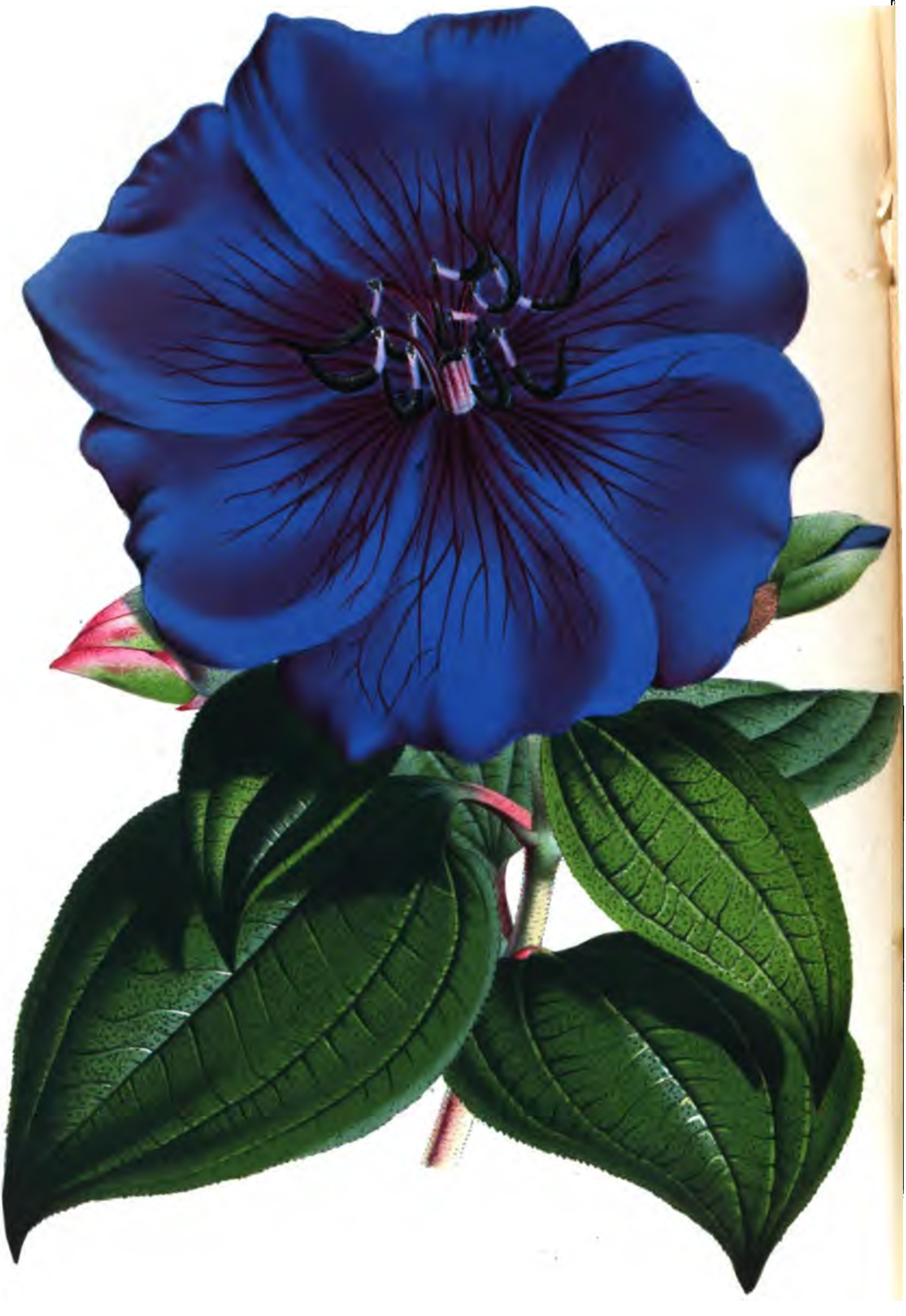
THE Great Show of the Royal Horticultural Society, at Leicester, took place on the 16th ult. and following days. The weather was all that could be desired for the Exhibition, although not just what was needed for the country, and, from a horticultural point of view the Show must be pronounced of a very high order. On entering, the first objects of note were three mounds of artificial rockwork, illustrating the geological formation of the county—a happy idea originating with Mr. Ingram, of Belvoir, who thought that while the produce of the county was brought together above ground, the foundation of its fertility should likewise be illustrated. Near these was a fine avenue of rare Coniferæ, exhibited by Messrs. Barron & Son, of the Borrowash Nurseries.

This avenue stretched across the exhibition ground up to a large circular tent, devoted to a splendid display of stove, greenhouse, and fine-foliaged plants, Palms, Ferns, bedding plants, &c., which formed the central point of the Exhibition. Running parallel with this avenue were two long tents, one devoted to fruit, vegetables. cut flowers, Roses, &c., and the other to stove plants, a splendid group of new and rare plants, shown by Mr. Veitch, a fine bank of Orchids, a grand assemblage of Lilies, Achimenes, Gloxinias, Ferns, Lycopodiums, Petunias, &c. Two other long tents crossed the ground at the top at right angles to these, one devoted to Pelargoniums (Zonal, Variegated, Show, and Fancy), and Fuchsias, and the other to the collections of stove, greenhouse, and fine-foliaged plants.

In the great centre tent, Mr. Williams and Mr. Baines occupied between them the whole of the centre stage, Mr. Baines carrying off the prize of £25 offered by the Royal Horticultural Society for the best group of ten flowering and ten foliage plants. Among Mr. Baines's plants were noble specimens of Erica tricolor Holfordii, Cavendishii, and Candolleana, and Genetyllis tulipifera. Among his foliage plants, Gleichenia flabellata, a tubful of Sarracenia purpurea and flava, Croton angustifolium, and Rhopala corcovadensis, were the most striking. Mr. Williams showed fine specimens of Phœnocoma prolifera, Kalosanthes Phœnix, Allamanda Hendersoni, grandiflora, and Aubletii, Croton variegatum, Pandanus, utilis, Dioon edule, and Dracæna indivisa. The Duke of Rutland's prize of 10 guineas for the best twenty stove and greenhouse plants, grouped for effect, was cleverly taken by Mr. Williams. This group contained a splendid Cyathea princeps, as a sort of back centre richly surrounded with Heaths, Allamandas, Dipladenias Houlletii and splendens, a fine Ixora, and Kalosanthes coccinea and superba. Two noble pairs of the Antarctic Dicksonia, and a grand collection of Palms, Ferns, and fine-foliaged plants were also arranged in this tent with great taste, and with the best effect. Among the various collections were striking examples of Sanchezia nobilis variegata, Clerodendron fallax, Asclepias curassavica, seldom seen at flower shows, Plumbago capensis, a fine plant of the rarely-seen Swainsona Osborni, and Caladium argyrites, the finest, perhaps, ever seen. There was a grand display in the miscellaneous class by Messrs. Veitch & Sons, who showed among others the new Coleuses Batemani, Berkeleyi, Bausei, Saundersii, Ruckeri, Scottii; the new Dracæna Moorei; the red-blotched Acalypha tricolor; the white variety of Lapageria rosea; the splendid new Crotons Veitchii and maximum; Maranta Veitchii; Ampelopsis Veitchii, a beautiful hardy climber, like the Virginian creeper, said to be perfectly hardy; Phormium tenax variegatum; and a magnificent Anthurium Scherzerianum, with fifteen expanded spathes. Mr. Archer, gardener to A. Turner, Esq., of Leicester, had the best Orchids, staging fine plants of Aërides affine, with nine branching racemes 20 inches long; Saccolabium guttatum, with ten flower spikes; Cypripedium barbatum, with nearly fifty flowers; Odontoglossum Pescatorei, &c. Mr. Williams, among some nice plants, had the extremely beautiful and elegant Dendrochilum filiforme, and a Miltonia spectabilis, with about thirty flowers. The Petunias were superbly grown and beautifully trained, both singles and doubles being the finest, perhaps, that were ever shown. The Achimenes were also superbly grown. The Gardeners' Chronicle Cellini cup was contested for by nine exhibitors, and was won by Mr. McLean, gardener to W. P. Herrick, Esq., of Beaumanor, while for the Journal of Horticulture two ten-guinea prizes there were two exhibitors, equal winners, Mr. Carmichael, of Sandringham, and Mr. Ingram, of Belvoir. A large number of new hardy Ferns, mostly raised from spores, was shown by E. J. Lowe, Esq., and J. E. Mapplebeck, Esq., many of these being of sufficient merit to receive first-class certificates.

—— THE name of *Lilium Wilsoni* has been proposed by M. Leichtlin, who is a great authority in this class of plants, for the beautiful Lily figured by us at p. 121, under the name of L. Thunbergianum pardinum. This change is suggested on the ground that it differs considerably in stature and other features, as we pointed out, from the true Thunbergianum, being much taller in growth, and of a different colour.

—— SAMPLES of Terra Cotta Garden Labels for pot plants, patented by Messrs. Maw & Co., of Benthall Works, Broseley, Salop, have been sent to us for inspection. They are durable, and when smeared with a little wet white lead paint can be easily written on with a black-lead pencil; or they may be written on with black enamel. The labels are of various sizes, inexpensive, neat in appearance, and are likely to be useful to the amateur gardener.



LASIANDRA MACRANTHA *Lind. & Seem.*

LASIANDRA MACRANTHA *Lind.* [illegible]

LASIANDRA MACRANTHA.

WITH AN ILLUSTRATION.

OUR picture of this magnificent stove plant, thanks to the artistic skill of M. Van Houtte's staff of floral illustrators, will render it unnecessary that we should append to it many words of eulogy. We must in justice state that it is a grand plant, the blossoms being no less remarkable for their size than for their depth and brilliancy of colouring; but what is most remarkable of all is, that these monster blossoms are produced abundantly on the tiniest plants, while in its more developed state it forms a freely branching slender shrub of moderate size, the beauty and profusion of whose flowers will render it a noble acquisition for our flower shows, no less than for our warm conservatories.

The plant was first made known by Dr. Seemann, who published a figure (not, however, giving the blooms of the size they have since attained), in his *Journal of Botany* for 1864. From the same source whence our own figure was derived—namely, the collection of Mr. W. Bull, Dr. Hooker has just published a figure in the *Botanical Magazine* under the name of *Pleroma macrantha*, the genus Lasiandra being by him merged in Pleroma.

We are indebted to M. Linden for the introduction of this fine Melastomad, it having been sent by his collector, Libon, from the province of St. Catherine, in Brazil. M. Linden first flowered it in 1864, and Mr. Bull, who has since acquired the stock, has produced it at several of our London shows during the present year, little plants of 4 or 5 inches high bearing six or seven flowers and buds. The elegantly-shaped oblong-ovate acuminate leaves, with their deep green rugose hairy surface, set off to great advantage the large smooth-petaled saucer-shaped intense violet purple blossoms, which latter are of rather too light a blue in our figure.

As a stove plant it is of very easy culture, requiring to be treated in the same manner as Pleroma elegans, and while it resembles the latter in general features, it quite eclipses it in the magnitude of its flowers.

M.

THOUGHTS ON ROSES.

THE spring and summer of 1868 will doubtless be long remembered by English horticulturists, and be often referred to in the future. Little or no rain fell from February to August. Cloudless days and cloudy nights were the usual order of things, so that even the refreshing dews, so customary and so beneficial to vegetation in our climate, were almost denied us. Newly-transplanted Roses have in some places suffered much, especially where the plants had been removed from a rich and too genial soil, and this notwithstanding mulching and watering them.

Laborious as is the work of a nursery or garden on a moist clayey soil, our sympathies this year must be reserved for those who have a lighter and more "workable" staple. On such the Roses have been simply miserable. Even on strong soils, fine as have been the growth and flowers, the latter have been unusually evanescent, opening in the morning and fading before night. One might water again and again, but watering at the root does not produce much moisture in the air, one necessary condition of a favourable Rose season.

I have often ventured to point out the superior freshness and beauty of the early pot Roses as exhibited in April and May, and never was this more apparent than in the present year. In my judgment, the Rose will not be fairly and fully represented at our flower shows till we have a grand show of pot Roses in April, at which Roses in pots shall figure, not by dozens but by hundreds or thousands.

Time was when stove and greenhouse plants were partly if not chiefly represented by cut flowers; but when the plants came to be shown in increased beauty and greater quantities, the cut flowers excited but little interest. So will it be with Roses. Can any of our readers recall the cut Roses at our Rose shows this year? In many instances they lay flagging and shrivelling in the heat even before the public were admitted, and long before the fashionable hours of four and five o'clock arrived, a great number were things of the past! Could anyone have gathered from them a correct idea of the varied beauty of the Queen of flowers, or have noted varieties for their gardens with any certainty that they were choosing the best? If not, where is the practical value of our Rose shows as at present arranged and conducted? for a sultry day at the end of June or beginning of July—by no means an uncommon occurrence—would invariably produce similar results. True, there is much in a name, and the name of a Rose show falls sweetly enough on the ear; but if the thing is to continue popular, or to be anything more than a pretty sound, the Rose must be brought before the public in all its native freshness, on bush and tree. "I never buy a Rose now from the cut flowers shown at the exhibitions," said a Rose amateur to me the other day, "for there you see nothing but the flower. I want to know something of the foliage, the constitution, and the habit of the tree, especially whether it produces few or many flowers, and whether eleven of every dozen are good or bad."

Turning to our gardens, it is yet too early to speak of the year 1868 as a whole, because if a "dripping time" should set in, we may reasonably expect a grand display of Roses in the autumn. The summer growth on Rose soils is unusually firm and mature, and the wood doubtless well stored with organised matter, which only requires the stimulus of moisture in earth and air, to produce the grandest results.

I of course must only speak of my own Rose grounds, situate at

Waltham Cross, in the valley of the Lea. The soil is a strong loam, 4 feet deep, resting on gravel. Water usually stands in this gravel within 4 feet of the surface. The ground has been thoroughly drained, the mains being 4 feet, the contributaries 3 feet 6 inches deep. Being surrounded with water, water has been freely used; but I have little faith in water alone on this soil. It requires to be supplemented either by mulching or *keeping the surface loose* by means of the hoe or fork. The latter is the grand panacea, on this soil, for all the ills which trees and plants are heir to; gravel and water, however, are not very far from the surface, *and the water is doubtless constantly setting upwards by the law of capillary attraction.*

Such a season as that just passed teaches us something. We learn a little by it, and have to unlearn a great deal. One's faith in many varieties would be sadly shaken were he to judge them by this season alone. Some of the favourite show Roses, whose reputation has been built up by cut blooms alone, have scarcely appeared in box or on tree, in anything like showable condition; whereas some almost-forgotten favourites, both new and old, have acquired or regained a high reputation. The best twenty-five varieties *of the year* with me have been:—

Alfred Colomb.
Antoine Ducher.
Beauty of Waltham.
Black Prince.
Dr. Lindley.
Elizabeth Vigneron.
Felix Genero.
Fisher Holmes.
François Louvat.
Jean Lambert.
La Duchesse de Morny.
La Ville de St. Denis.
Lord Macaulay.
Louise Peyronny.
Madame Victor Verdier.
Mdlle. Annie Wood.
Maréchal Vaillant.
Marie Baumann.
Monsieur Boncenne.
Monsieur Noman.
Pierre Notting.
Praire de Terre noir.
Prince de Portia.
Queen Victoria (Wm. Paul).
Souvenir de Monsieur Boll.

Do we seek the why and wherefore of this? The reply is, Constitution and substance. A Rose with good constitution and substance stands best the vicissitudes of climate, be it rain, frost, or sun heat. Thousands of Roses of perfect beauty, but of delicate constitution, will be found to have succumbed to this tropical summer; and this year's experience should teach us not to pay too much respect to the one idea of form, but to look after substance and constitution also. Another year may teach us some other fact, and so little by little, with Roses as with other things, is a wide and correct knowledge built up by experience.

Paul's Nurseries, Waltham Cross, N. William Paul.

TROPÆOLUM SPECIOSUM.

THE hardiness and endurance of this beautiful climbing plant forms a strong plea in its favour, and should bring it into more general cultivation. Having bright crimson flowers, and well-defined foliage, it is well adapted for growing on trellis-work amongst Roses and other climbing plants, also for covering low walls provided with netted wire, its leafstalks readily coiling round the wires.

We have some plants of it here, which have lived through the winter for a number of years without the slightest protection ever having been afforded; and they always come up in spring, fresh and strong, as if unconscious of the severe frosts which have passed over them; while they never fail to flower through the summer and autumn months even in the coldest seasons. Last spring, as some Roses to which it had entwined part of its stems during the preceding season, were being pruned, two shoots were found to be making growth upwards of 2 feet from the ground, having survived through the 11° of frost—our lowest point through the past winter—which we had on the 4th of January. It is readily propagated either by cuttings or by division of its spreading roots, which sometimes form plants of themselves, when they come near the surface at a considerable distance off.

Gordon Castle. J. WEBSTER.

SEASONABLE GARDENING HINTS—SEPTEMBER.

THE season now drawing to a close has on the whole been a very unfavourable one for the growth of flowers and vegetables. The effect of "fifteen weeks' drought" is very manifest in every flower and kitchen garden, particularly where the soil is light; but it is wonderful to see how things have revived since the fine rains of last month set in. The flower garden now looks fresh and beautiful, and, though some things will never come round this season, still if the weather should continue mild and not over-wet, there will be a fine autumn display. In the kitchen garden all the autumn and winter crops have made wonderful progress, which is quite cheering to look at after the pitiful appearance some of the summer crops have presented.

Zonal Pelargoniums for autumn display should now be well attended to. If wanted to flower late, they will do well in pits and frames the whole of this month. The plants should be set a sufficient distance apart for the sun and air to reach all parts of them. The lights should remain off during the day unless the weather be rough; and some air should be left on during the night. The plants should be near the glass, and should not be over-watered. Cinerarias and Primulas in frames must not be crowded too close together, and they should have abundance of air. The young stock of hardwooded greenhouse plants will do well during the month in pits and frames if they have plenty of air, but it is advisable to remove them into the houses when there is proper accommodation for them, so as to set the pits and frames free for other purposes. Cuttings of Pelargoniums of all kinds put in last month will now be rooted; these should be potted-off singly into small pots, and put into a pit or frame and kept rather close until they begin to get established, when air should be admitted rather freely.

Towards the end of the month hardwooded greenhouse plants that have stood out-doors should be placed under glass; they should have abundance of air day and night except in stormy weather, and great attention should be paid to watering them, as plants, whose pots are full of roots, when placed on the stages of the greenhouse dry up very soon, and if not properly attended may suffer considerably before they show it.

As the flower garden has improved much since the late rains, every attention should now be given to neatness in tying up all tall-habited plants that are still growing, and cutting down decayed ones. All decaying flowers and leaves should be removed as soon as they are perceived. As Pelargoniums will now be making free growth, cuttings can be easily got without disfiguring the beds; they will strike freely in pots or boxes set on a south border, if put in at the beginning of the month. The seeds of Calceolarias, Petunias, Salvias, Pentstemons, Antirrhinums, and numerous other flowers, may now be gathered. Some Winter Aconites, Crocuses, Snowdrops, and other bulbs may be planted. The heat and drought have been very unfavourable for blooming Roses, but have produced well-ripened wood. After the fine rains of the last month we may look for a gay bloom in the autumn.

The present season has been a most unfortunate one for many of the summer crops. Peas and Beans that in an ordinary season would be in full bearing the whole of the present month have been over several weeks; whole breadths of Carrots and Turnips have disappeared; Onions are in general miserably small; Cauliflowers have refused to head—in fact vegetables of all kinds have suffered, except such as have been almost continually supplied with water. Every endeavour should now be made to have an abundance of autumn and winter crops. Celery having grown rapidly since the rains of last month, attention should be paid to earthing it up as it advances in growth. Cauliflowers have grown well; those planted as late as the 12th of last month will head if the autumn be not very severe. Brussels Sprouts, Borecoles, and Broccolis have grown much, and promise to be fine. Turnips are growing rapidly; those sown as late as the 8th and 10th of August will bulb this autumn. Kidney Beans have done well since the rain. Endive and Lettuce have grown well. Large breadths of hardy Lettuce should be planted for winter and spring use. Spinach is growing well; it should be well thinned, and the hoe should be run often between the rows. Large breadths of Cabbages should be planted on well-prepared ground at the beginning, and again about the end of the third week in the month. Herbs should be cut, dried in bunches, and hung up in a dry airy place.

The hot season has been favourable to fruit trees. The wood ought to be well ripened this season, and will be where proper attention has been paid to the disbudding and thinning of the shoots. The crops of all kinds of fruit have been plentiful and fine here, and the trees promise well for next season. All kinds of fruit should be gathered as they become ripe, handling them no more than is absolutely necessary. Pears should be laid singly on the shelves of the fruit room, and the best kinds of Apples should not be more than two or three deep. Late vineries, wherein Grapes are ripening, should have abundance of air during the day-time and some also at night, together with a little fire heat should the weather set in wet and cold. Young plantations of Strawberries should be made at once if not already done; and the old plantations, as they have in some places suffered from the drought, should have every attention paid them, so as to encourage good healthy growth, and fine crowns. All plants intended for forcing, if not already in their fruiting pots, should be put into them at once; they should now be set in beds in some open sunny situation, and the plants not placed too closely together; all runners should be pinched off as they appear. If the weather be dry, they must be well and freely watered, but if rainy, they will need care and attention as to the supply of water.

Stourton. M. SAUL.

ON HEATING VINE BORDERS.

THE question of heating Vine borders is one of the greatest importance to all interested in the culture of the Vine, more particularly to those who may be about erecting houses for Grape culture. In the early forcing of Vines the advantages gained by raising the temperature of the soil in the border by artificial means, has long been recognised. To attain these advantages a diversity of materials has been used for covering the border, and in some instances heat has been applied by means of hot-water pipes placed beneath the borders, which is the best and surest way of placing the control of temperature in the hands of the cultivator, The difficulty is to decide which to adopt of the many modes which have been advocated, and to find that which is most efficient and inexpensive, and likely to insure the best results.

In practice I have found pipes in chambers under the borders to answer perfectly; the chambers should be of sufficient size to permit of being entered to ascertain the state of the matter underneath; and by well elevating the border, the space within the chamber may be utilised and turned to good advantage for many practical purposes. The expense involved may militate against their coming into general use, but nevertheless I have a strong persuasion that when heat is supplied from pipes directly under the roots, there are advantages in favour of chambers not secured by any other system in use—advantages which should not be ignored on the ground of expense. Many gardeners have had to contend with the disadvantages arising from the leakage of a pipe supplying bottom heat, and that, too, at a time when the necessary clearance for repairs has occasioned a great loss, if not the utter destruction of the plants. These facts are sufficiently condemnatory of the system of laying the pipes in rubble under the roots of Vines, or in drains covered with flagstones, both methods being equally objectionable in practice.

I will now describe what I consider to be a very simple, efficient, and comparatively inexpensive method of applying heat to Vine borders. The Vines being planted inside, an outer border 12 to 15 feet wide will be sufficient. The roots in each compartment should be separated by a brick wall, and under each should be formed a chamber 2 feet wide, continued along the front of the border. In this chamber should be placed the pipes for the supply of heat; the border should slope towards the south, and should have the bottom well concreted; on this the tiles—6-inch socket-drain tiles—should be laid in parallel rows, 8 feet apart, to conduct the heat from the chamber in front under the roots, and should be brought to the surface immediately under the front line of pipes in the interior of the house. The joints of the pipes should be carefully cemented to prevent the roots from entering them, and they should be covered with rubble. The circulation of heated air through the pipes is to be facilitated by means of ventilators in the front chamber, and thus perfect ventilation, that great difficulty in early forcing, is provided for during the severest weather.

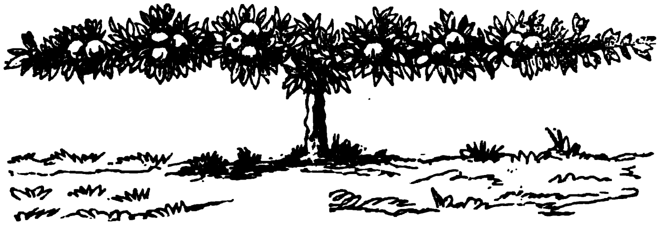
Having thus made provision to secure a proper temperature for the roots, the next point is to afford due protection to those near the surface. The genial circumstances under which the growth of the Vine is promoted in a state of Nature, are not fully recognised in our early artificial forcing of the plant. Sun, light, and air, those life-invigorating agencies, the essentials to a healthy development, are to a great extent shut out by the materials placed on the surface of the border. I would therefore strongly recommend that the outside border should be partly covered with glass: I say partly, believing the ridge-and-furrow system to answer the purpose better than a flat covering. These ridge sashes should be made conveniently light to be easily moved: 3 feet in width, with the furrows between the ridges, also 3 feet, would answer well; thus the distance from ridge to ridge would be 6 feet. The furrows may be of wood or other materials, but I give preference to sheets of corrugated galvanised iron turned at the edges to fit to the sashes, as these carry the water clear off the border. The upright framework for the sides should be of wood, 2 feet high in front, rising to 3 feet next the house. The ridge sashes should be so constructed as to be readily fixed or removed by the garden workmen. These glass protectors might be put to a variety of other uses, besides securing to the roots of the Vines as near a proximity to a state of nature as can well be obtained under an artificial state of culture. Heat may be admitted to the surface of the border from the chamber surrounding it.

I firmly believe that confining the roots of the Vine to the soil of the border, is in accordance with Nature, and do not approve the plan adopted by some, of laying under the roots of Vines tiles and open drains, through which heat is circulated, and through which the roots are allowed to penetrate. Roots suspended in these hollow cavities are worthless, being exposed to alternations of temperature and moisture which must impair the vigour of the Vine.

Witley Court. GEO. WESTLAND.

GARDENING IN FRANCE.

THEY manage these things better in France: so at least was the popular notion as to many of the matters of every-day life; but we have scarcely been prepared to admit as much in so far as regards the pursuit of horticulture. Nevertheless, there are many hints to be gleaned from the French practice of gardening as carried out at the present day, and Mr. Robinson's recent book* has made us acquainted with such of these as particularly presented themselves to his notice, in the course of a residence of several months in Paris during the Great Exhibition of 1867. We propose to gather up now and hereafter, a few of these gleanings, accompanied by illustrative figures, for which we are indebted to the author, and notice first the Horizontal Cordon, a mode of training particularly adapted for Apples grown against the lower parts of walls and buildings. Cordon is a term applied in France to trees confined to a single rope-like stem, that being furnished with fruiting spurs or fruiting branches, according to the kind of tree. An Apple trained as shown in the figure annexed is a bilateral cordon, and this form of tree Mr. Robinson strongly recommends to fill up bare spaces at the base of fruit walls, the front of pits, or on any low naked wall with a warm exposure. "As in many cases the lower parts of walls in gardens are quite naked, this form of cordon offers," he observes, "an opportunity for covering them with what



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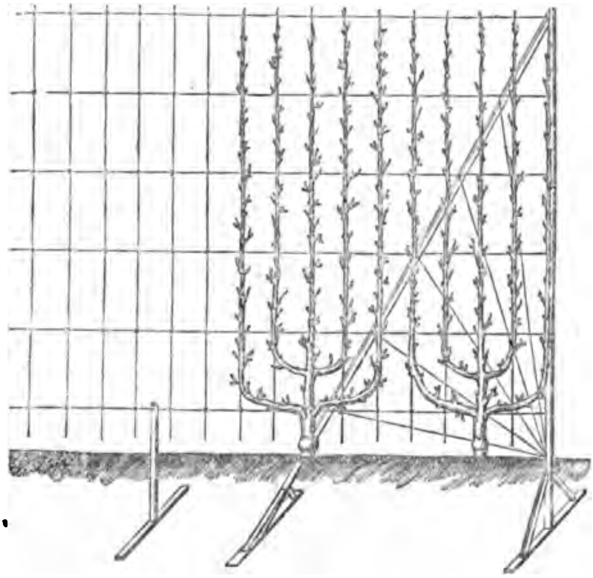
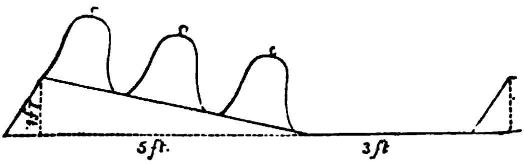
* Gleanings from French Gardens. By W. Robinson, F.L.S. With numerous illustrations. London: F. Warne & Co. A usefully suggestive book, noting the leading points of French practice in relation to Subtropical Gardening and the arrangement of the Flower Garden, Oleander culture, Orange culture, the Cordon system of Fruit culture, Asparagus culture, Salad culture in winter and spring, Public Parks and Gardens of Paris, and a variety of other subjects.

will yield a certain and valuable return. It is by this method that the fine Apples sold in Covent Garden and in the Paris fruit shops at such high prices are grown. Why should we have to buy these from the French at such a high rate? Considering the enormous number of walled gardens there are in this country, there can be no doubt whatever, that by merely covering, by means of this plan, the lower parts of walls now entirely naked and useless, we could supply half a dozen markets like Covent Garden with the very choice fruit referred to. The climate in most parts of England will be found to suit them quite as well as that of Paris, if not better, because the sun in France is in some parts a little too strong for the perfect development of the flesh and flavour of the Apple. There is no part of the country in which the low cordon will not be found a most useful addition to the garden—that is, wherever first-rate and handsome dessert fruit is a want; while in very cold and northern parts, where many Apples ripen with difficulty, it will prove a great boon. There, of course, it would be desirable to give the trees as warm and sunny a position as possible. In no case should the system be tried except as a garden one—an improved method of orcharding being what we want for kitchen fruit, and for the supply of the markets at a cheap rate. The Calville Blanche Apple, the kind above all others that I would recommend for growing on the sunny places above alluded to, sells in Covent Garden at half-a-crown and sometimes three shillings for each fruit." The whole subject of cordon trees is very fully treated on, in the book from which this passage is condensed.



Our own modes of Training Espalier Trees by means of rough wooden stakes, or a heavy metal trellis, have little enough to recommend them, and therefore a neat and cheap form of trellis, effective but tasteful, would be welcomed in many a garden. Such a trellis is represented in the accompanying figure (p. 201). It is formed of uprights of T-iron, connected by slender galvanised wire, the wires being tightened by little *raidisseurs*, which keep them quite firm. This kind of trellis, 7 to 9 feet high, is said to be erected for less than a shilling a yard run. The form of tree is, of course, varied, but one which is adopted at Versailles, and is found to answer well, is represented in the figure just referred to. It is generally preferable to the cordon or single-stemmed tree, because a more free and natural development is permitted, while at the same time the trellis is quickly covered, and a considerable variety of sorts can be got together within a small space.

We can only now refer further to the Cloches, which are simply large and cheap bell-glasses, and which are used for the growth of winter and spring salads, the French market gardeners by their aid being enabled to excel all others in the production of these articles. Acres of them may be seen in the market gardens around Paris, and private gardens have them in proportion to their extent. They are about 16 inches high, and the same in diameter of base, and cost about a franc a-piece, or less if bought in quantity. M. Rouchonnat jeune, 75, Rue du Faubourg St. Antoine, offers them at 85 francs per 100, if more than 500 are taken; smaller quantities at 90 francs per 100—*i.e.*, at the rate of about ninepence each; they are packed by twenties, four francs being charged for the package. "The advantages of the Cloche are—it never requires any repairs; it is easy of carriage when carefully packed (one inside the other in a rough frame made for the purpose); carefully handled it is very rarely broken; and it is easily cleaned—a swill in a tank and a wipe of a wad of hay every autumn clears and prepares it for winter work. These bell-glasses are useful in many ways besides for salad-growing—for example, in advancing various crops in spring, in raising seedlings, and in striking cuttings."



THE GLADIOLUS IN 1868.

THIS favourite flower, like many others, has been forced into blooming two or three weeks earlier than usual, by the present extraordinary dry and warm summer. Having fortunately potted about 150 of the best varieties new and old, and grown them in a shaded situation, I have been able to see them in their true characters, which cannot be done this summer in the open borders.

The following new sorts of 1868 have already flowered with me—namely, *Semiramis*, a grand flower, of a peculiarly purplish rose with white lines in the centre of each petal. *Norma*, a large well-formed flower, French white stained with lilac. *Princess Alice*, lilac rose, stained with carmine. *Mozart*, *Rossini*, and *Uranie*, of this year's sending-out, have not yet flowered with me.

The following varieties sent out in 1867 have flowered very finely, and can be recommended to growers as of the very best quality. *Shakespere*, a grand flower, white flamed with carmine rose; it is an early bloomer, and has seeded plentifully with me. *Euridyce*, another grand light flower, white flamed with carmine. *Milton*, very fine white, tinted with rose. *Thomas Moore*, one of the very best, rosy carmine on a white ground. *Princess Mary of Cambridge*, clear white, large carmine spot. *Lady Franklin*, very fine, white ground, shaded with rose. *Adolphe Brongniart*, fine light rose, flamed with orange. *Anais*, very dwarf and fine, white and lilac shaded. *Sir J. Paxton*, fine large flower, light orange carmine on a white ground. *Maréchal Vaillant*, very fine scarlet with white lines. *Sir W. Hooker*, cherry and carmine, large flower. *Grueze*, rose cerise, fine spike. *Noemie*, large, light rose. *Felicien David*, cherry and rose, white throat. *Apollon*, rose and lilac, white throat.

Of the older varieties the very best have been the following:—*Meyerbeer*, fine vermilion scarlet, grand spike and finely-shaped flowers; *Madame Furtado*, fine white and rose shaded; *Reine Victoria*, fine large white, one of the very best; *Empress Eugénie*, another fine white variety; *Belle Gabrielle*, lilac rose, flamed with rose; *Fulton*, cerise scarlet, fine spike; *Lord Byron*, very bright crimson scarlet, but the flowers deficient in shape. I have flowered a very fine seedling of a bright yellow colour, raised from Eldorado. The flower is very large, and the shape and spike everything that could be desired. In the course of another year I expect to be able to exhibit it, along with some other promising seedlings.

Welbeck. WILLIAM TILLERY.

STONY GROUND PLANTS.

UNDER this heading I would call attention to a highly interesting class of plants which I have successfully cultivated, and my experience among which may be of some service to younger men when they have to clothe with beauty banks high and dry, where the little pinch of fine soil, like the mortar in a building, bears but a small proportion indeed to the bulk of shapeless stones, great and small, that give the land its appropriate name of stony ground.

When the great Linnæus admired the Furze bushes in flower on an English common, he only passed a graceful compliment to the Divine Wisdom which had loaded with beauty this prickly denizen of the waste. It is always instructive when the cultivator can come at a plant in its native habitat, before man has tampered with its top in the way of pruning, &c., or meddled with its root in the way of changing its locality by transplanting; for as long as a native plant is to be seen *in situ*, you can make notes of what "hath set it up," and may see in some measure where its affections lie, for truly it may be said of plants as of man that "some affect the sun, and some the shade." The Cistus or Rock Rose, the Helianthemum or Sun Rose, and the whole of the Stonecrop family are pre-eminently the furniture for the stony places; but in the whole circle of cultivated plants, we shall not find one better calculated for this kind of service than the DOUBLE-FLOWERED GORSE, for it exposes no spread of foliage to the stormy winds, and, moreover, carries itself so close to the ground as seldom to rise higher than the radius of its base, thus forming half a globe of the most glorious golden flowers that ever adorned a garden, the little that is seen of green enhancing the brightness of the gold, like the artistic dots that shade some famous picture. I would, therefore, direct attention to this plant in the first instance; and I may as well inform the reader that I was rather peculiarly situated when I had to grow this plant on the top of a stone wall, though hundreds could testify that it was there grown to perfection. The grounds were intersected by the main turnpike road, and in order to secure privacy both sides were bounded by a stone wall about the height of a man; and the double-flowering Gorse formed the coping, and overhung the top of the wall, so as not to give stragglers any encouragement to climb over.

I need scarcely remark that ordinary planting would not have answered my purpose in this case, neither will it answer generally with stony ground, where plants have to establish themselves against steep slopes, or on hillocks, whether natural or artificial. The plant must be put in with a quantity of rich food, sufficient for it to feed upon until it can forage among the stones; and this food for various reasons must be supplied, in the first instance, in the form of mud, having such an amount of clay and manure in its composition as shall make it cling to the bed, and so thoroughly enclose the roots of the plant and the ball of earth, that no air can get at the feeders; while besides the mud, as many stones as can conveniently be got to cover it, should be laid on not only to shade and weight the soil, but to act as a cooler and moistener to the ball; for we always find the under side of a stone moist and cool, even in the sunshine when it is partially embedded in the earth, and when we are dealing with land where stones predominate we must accommodate our views to suit circumstances which it is above our power to alter.

If I recollect aright we got plants of the double-flowered Gorse in pots at 40*s*. per 100, or at something under 6*d*. per plant; and when we consider the area that this plant will cover in three years, forming a bush

6 feet in diameter, I do not recollect any other instance where so much real ornament can be got for so small an outlay from a ligneous perennial. When the plant is not in flower it is no straggler, but always looks trim and neat, for it "buries its dead," and it is not until the plant is finally chopped to pieces that you see the dead leaves and twigs that did its work before it attained the adult state.

Although this Furze will grow very well on level ground, it is preferable to plant a specimen on an artificial knoll or hillock, so that the centre of the plant may thereby stand high, and the branches droop gracefully down the sides of the slope. The great fault of the plant is its dwarf habit, and this method of planting just brings it up to the level of the eye. It falls to the lot of very few to have it, as in my case above referred to, where it formed an avenue, and stood 9 feet high, so that a lady on horseback could enjoy the fragrance, and the beauty of its flowers.

How many dull slopes and shapeless mounds of earth throughout the country might be made gay with this plant at little cost! aye, even the very "cairns" (heaps) of stone, with the help of a little rich mud, might thus be made to "blossom like the Rose."

Salford. ALEX. FORSYTH.

VIOLA CORNUTA.

I ENTERTAIN the impression that this bedding plant is better adapted for spring than summer work, if rightly treated. Nearly all the Violas are naturally spring-blooming plants, and V. cornuta is no exception to the general rule. V. lutea is in my estimation the most constant bloomer of all the bedding kinds; its habit is much dwarfer than that of V. cornuta, and I find that it withstands the drought much better. Last May twelvemonths I put out well-rooted plants of V. cornuta for edgings and other purposes, along with the usual bedding stuff; the plants grew strongly but flowered thinly, and as a consequence I proposed to dispense with it another year, but for various reasons it was allowed to stand in its place over the winter, and very early in the spring it began to bloom, and during April and May was the most effective mass of purple I have ever seen. By this time the single line of plants had become from 15 to 18 inches in width, and it was not thoroughly exhausted till the end of June.

The most effectual way to obtain this display every spring would be, I apprehend, to lift all the old plants as soon as they had done blooming, cut them close back, pull them well to pieces, and plant the divisions in a north border till October, when they might be again transferred to the flower garden. I am not sure indeed if they would not be, by this time, again in bloom, but at all events the plants will never prove so generally satisfactory as for spring work. Some gardeners have spoken favourably of it when supplied with plenty of water for summer bedding, but it is very important that we should secure for that purpose plants that will thrive with as little artificial watering as possible. It may be that in proportion as we use spring-flowering plants for early decoration, we shall care less to obtain masses of brilliant colours under the rays of a tropical sun.

Old Shirley. ALEXANDER DEAN.

EARLY SPRING-BLOOMING SCILLAS.

SCILLAS are such sparkling gems amongst early-flowering spring plants, that now, as planting time approaches, we gladly transcribe from an article recently published in the *Gardeners' Chronicle*, the following particulars respecting them. Some time since a question arose as to the correct names of these beautiful little vernal jewels, and with a view to clear up the matter, living specimens from various gardens, as well as the dried specimens in the Kew herbarium, and the published figures and descriptions of various authors, were examined by our friend and colleague Dr. Masters, with the following result:—

1. SCILLA BIFOLIA, Linn. (*Bot. Mag.* t. 746).—Bulb ovoid; leaves 2—3, spreading, recurved, linear lance-shaped, channelled, terminating in a short blunt cylindrical point; scape as long or longer than the leaves; bracts minute; pedicels spreading, the lower longer than the upper; flowers 5—6, blue; segments oblong, obtuse, spreading.—This we take to be the type, the nearest to the wild form, intended by Linnæus. There are in gardens several varieties of it, differing in the size and colour of their flowers, in the period of their blooming, &c., and it is a matter of opinion whether or no these are varieties or species. We consider them as varieties of one species, for three reasons—first, that they all have certain characters in common, available for specific distinction, and among them we may mention, as easily appreciable by the gardener, the blunt cylindrical point to the leaf. We take first that variety which expands the earliest, and to which, therefore, the name præcox is well applied.

Scilla bifolia var. præcox. (S. præcox, *Willd.*; *Sweet, Brit. Fl. Gard.* 2 ser., tab. 141).—This differs from the type in its earlier expansion, and in its larger flowers, of a deeper blue colour, the lower flower-stalks becoming after a time so much lengthened as to form a flat-topped inflorescence. The plant is not very common in gardens, but is sometimes grown under the name of S. bifolia major. There is a white form of it.

Scilla bifolia var. carnea, Kunth (*Bot. Mag.* t. 746).—This resembles the type in all respects, save that its flowers are of a pale flesh-coloured tint. It seems to be the Hyacinthus stellatus flore rubente of Parkinson, who thus speaks of it:—"The difference in this from the former (bifolia) is onely in the flowers, which are of a faire blush colour, much more eminent then in the others, in all things else alike."

Scilla bifolia var. rosea (S. rosea, *Lehmann*; ? S. bifolia taurica, *Regel, Gartenfl.* 1860, tab. 307).—This differs from the preceding in the larger size of the flowers, and in the more globose form of the bulb, and may be the plant spoken of by Parkinson as "Hyacinthus stellatus præcox flore suave rubente, the early blush-coloured starry Jacinth," which, he continued, "is very rare, but very pleasant, his flowers being as large as the first (præcox), and somewhat larger than the blush of the other kind (bifolia carnea)." We believe taurica is the same plant with blue flowers.

Scilla bifolia var. alba, Kunth.—Differs from the type only in its white flowers. Parkinson says of this:—"The buddes for flowers at the first appeare a little blush, which when they are blowne are white, but yet retaine in them a small shew of that blush colour." He goes on to say:—"We have another whose flowers are pure white, and smaller than the other, the leaves thereof are of a pale fresh greene, and somewhat narrower." This latter is the commoner variation of the two.

Scilla bifolia var. candida.—We propose this name for a pure white-flowered variety, the flowers of which are as large as those of S. bifolia præcox, or of the var. rosea, of which indeed it might be considered as the white-flowered representative, but that it flowers later. It is, perhaps, the H. stellatus præcox flore albo of Parkinson.

2. Scilla sibirica, Andr. (*Bot. Rep.* t. 365 (1804); *Van Houtte, Fl. des Serres*, xvi. tab. 1677. S. amœna, *Redouté Lil.* tab. 130).—Bulb roundish, the size of a chestnut, with a dark rind; leaves four or more, erect or somewhat spreading, flat, strap-shaped, slightly thickened at the point; scapes one or two, flattened, striated, scarcely so long as the leaves; flowers 2—4 or even 6, rarely solitary, on short stalks, horizontal or nodding, bell-shaped, ultimately spreading widely, of a pale clear blue colour, rather more intense along the central nerves of each segment. This beautiful species is sometimes seen in gardens and catalogues under the names of præcox and amœna. It flowers a little later than bifolia, but before S. amœna, and is one of the most lovely of all spring flowers, admirably adapted for spring beds. The head-quarters of the species would appear to be in Persia, Asia Minor, &c. Varieties with larger flowers than ordinary, and others with solitary blossoms are known.

Scilla sibirica var. amœnula (S. amœnula, *Bot. Mag.* t. 2408).—To this form we refer some plants which are smaller than S. sibirica, with more ovate bulbs, and paler flowers.

3. Scilla amœna, Linn. (*Redouté, Lil.* t. 298; *Bot. Mag.* t. 341).—Bulb ovoid or roundish; leaves numerous, spreading, strap-shaped, acute, 10—12 inches long, ½ inch wide; scape erect, shorter than the leaves, compressed, two-edged, striated, purplish above; flowers 3—6, dark indigo blue, in a loose two-sided cluster, horizontal when expanded; pedicels erect, curved at the apex, bluish, ½ to ¾ inch long, springing from the axil of a very minute whitish bract; perianth 6-parted, nearly 1 inch across when expanded; segments spreading horizontally or reflexed, lanceolate acute slightly concave at the apex; filaments dilated and whitish at the base, blue above; anthers blue; ovary pale yellow, oblong; style blue.—A native of Central Europe, the Tyrol, &c., and an old inhabitant of our gardens. Its flowers are not so nodding as those of the preceding, they are also flatter, not so bell-shaped, and of a darker blue, while the ovary, as Parkinson's sharp eyes detected, is of a yellowish green colour, thus giving to the flowers the appearance of a yellow centre or "eye." It flowers in the south of England in April, following close upon sibirica.

The species above mentioned have all this character in common, that the bracts at the base of the pedicels are very minute, whereas in S. verna, S. campanulata, S. italica, and the later-flowering kinds, the bracts are often as long as the pedicels themselves.

ERICA VENTRICOSA MAGNIFICA.

THE above-named Heath, when well grown and bloomed, is one of the handsomest of the ventricosa section. I have frequently been asked the reason of my plants of it producing such highly-coloured flowers. As soon as the flower buds can be seen bursting through the calyx, the plant should be placed out-doors, and well exposed to the sun and air by day; if the nights are likely to be frosty it must be protected, but on mild nights it should be thoroughly exposed to dew and air. This will give the flowers that brilliant deep rose colour so much admired by visitors at exhibitions.

The Heaths of the ventricosa section are of easy culture if potted in good peat, with a sufficient quantity of sharp sand, and provided with efficient drainage, to cause the water to pass freely through the ball. They must be potted firmly, and well attended with water, so that the plants do not suffer from becoming dry at the root, for this will soon prove fatal to them. They should be well exposed in the open air as soon as the blooming season is over, and while making their growth, for much firmer and shorter-jointed wood is thus obtained than when they are grown in houses or pits, and they most varieties—a point of no small importance, for in the case of many good Pears there is only a very short season during which they can be called eatable. The tree is hardy and a good bearer, succeeding well on the Quince, either as a pyramid or standard. B.

THE HOT DRY SEASON OF 1868.

NOW that the intense heat, bright sun, and absence of rain, which have characterised the last eight or ten weeks, have given place to pleasanter weather, it may be as well, before the impression dies away, to compare notes as to the effects which this heat, sun, and drought have had upon Vegetation in general, and on Fruits in particular, because these afford some interesting evidences of those effects. As gardeners, we are accustomed to consider a great amount of sun heat to be one of the chief requisites necessary to the perfection of fruit-growing, more especially wall fruits; but after the experience of the past season I incline to the opinion that this must be taken with a reservation, and that a violent and long-continued heat, uninterrupted by rains or anything to cool the atmosphere at intervals, is more likely to be injurious than beneficial to the fruit, by causing it to ripen prematurely, and with a great deficiency in size and flavour. At all events, such has been the case with most of the out-door fruits at this place, which have this year ripened-off long before the usual time, and before they had attained a proper size and maturity. The early-set fruits of Strawberries may be taken as an exception; they ripened gradually before the heat set in so intensely, and were consequently very fine both in size and quality, but the later-set fruit changed colour before it was half grown, so that the season was very short. Raspberries were altogether deficient as regards size, flavour, and crop, although at one time most promising; a comparatively wet season always suits them best. Gooseberries on the whole ripened-off prematurely, and were far from attaining their usual size and flavour. Currants from standing pretty closely together, and being well clothed with foliage, fared rather better, but were not up to the mark. Cherries on south walls ripened early, and were small and dry; on the contrary the same sorts on a north wall were full-sized and of excellent quality. Jaune Hâtif Plums were ripe by the last week in June, a fortnight earlier than usual; the fruit was very small, dry, and flavourless.

To-day (Aug. 6th). I have gathered the last of a crop of about two thousand Apricots. In ordinary seasons we should consider it early to gather the first so soon in August. Wherever the fruit was well protected by the foliage it was very superior both in size and quality; but where exposed to the fierce rays of the sun it was small, and although dead ripe on the sunny side, was very often green at the back. Should not this teach us to be rather careful how we defoliate? The Early Anne and Early York Peaches are all ripened off, and later sorts are coming in fast, but the size and quality are greatly below the average.

What the ultimate effect may be upon the main crops of Apples and Pears cannot at present be determined with any certainty. The early Pears have certainly been very dry and deficient in flavour, although beautifully coloured. Neither can much be said for early Apples, for although looking tolerably ripe, they are small, hard, and sour. Of the main crops of the latter I have hopes of yet seeing some fine fruit. More than half the crop that set, to my great relief, fell off at midsummer, and since then, owing to the ravages of the larvæ of the figure-of-8 moth, a great number have been continually falling, all pierced by the maggot; this has reduced what would have been far too great a crop for the good of the trees, within moderate dimensions, and they are beginning to assume a much more promising appearance.

Redleaf. JOHN COX.

A SELECTION OF CHOICE FIGS

VARIETY is especially required in a collection of Figs, in order that the Fig house may furnish fruits suitable and agreeable at all times, and to all tastes. There is to be found amongst Figs abundance of variety, whether we judge by size, colour, flavour, hardiness, fruitfulness, or season of ripening. I propose to give a selection of the most prominent varieties, having regard to the foregoing points.

Size.—Some Figs are very large, while others are very small; and some prefer the one, some the other. Grosse Verte and Brunswick are the two largest Figs we have fruited here; I have seen very large fruits of Castle Kennedy exhibited, but I have not yet fruited this variety. Black Provence, Trois Récoltes, and De Lipari are the smallest.

Colour.—Some Figs are in appearance more tempting than others. There is a great range of colour amongst them, some being so pale that they are termed white, others so dark that they are called black. There are, however, none either white or black. One of the palest-coloured Figs is De la Madeleine, which is of a clear pale yellow; another is the White Marseilles, which is pale green. Col de Signora Nera, Bourjassotte Noire, and Black Provence, are good examples of the dark-coloured varieties—dark violet they may be called. Of green-fruited sorts, the most striking is D'Agen and Grosse Verte; of tawny brown, Turkey, Brunswick, and De l'Archipel; and, lastly, the striped-fruited Fig (Figue Panachée), which is really very handsome, being beautifully striped with deep green and pale yellow.

Taste or Flavour.—This is always a ticklish subject, taste being so varied, and varying so much—one's own individual taste that is, one day liking one thing, the next day something else, just as our health, or, perhaps, our temper may stand affected. Some prefer what they term mildness in the flavour of fruits; this to me is mawkish insipidity. I prefer briskness in Figs—sugary lusciousness, which is found in well-ripened fruit of such varieties as Col de Signora Blanca, Col de Signora Nera, Grosse Verte, Bourjassotte Grise, and sometimes, although not quite so constantly, in White Ischia and Black Provence. Again, Figs themselves vary much in flavour, according to the situation or conditions under which they may be growing. Herein lies the charm of growing a number of varieties in the same house. Some of the higher-flavoured sorts require great heat and bright sunshine to bring them up to full perfection; it may happen that these conditions cannot be fulfilled, the weather may be dull and sunless, and more heat may be required than can be given conveniently: then some of the second-rate sorts will surpass them in flavour. The little White Ischia is very fickle in this respect, the fruits of to-day are excellent, those of three days hence watery and tasteless. Bourjassotte Grise is the most constantly good variety under all conditions that I have found; White Marseilles comes second, although it is never very rich.

Hardiness.—This is a point of the utmost importance; it is exceedingly important to discover what are the varieties most suitable for cultivation in the open air in this country. I have not yet had time to prove much in this respect. The county of Sussex, as is well known, is famed for its Fig trees. In the gardens at Arundel Castle the White Marseilles, called there White Geneva, succeeds admirably as an open standard. I have eaten some exceedingly good fruit of that variety grown on these trees; and I am told that in some of the warmest seasons they ripen off two crops of fruit, but this is rather unusual. The Black or Blue Ischia is the next hardiest variety that has been proved; then on walls, Lee's Perpetual or Brown Turkey; and lastly, the Brunswick. These four constitute the whole of the stock of hardy Figs I have met with, suited for open-air cultivation. It must be borne in mind that our seasons are far too short to allow of the Fig producing more than the first crop of fruit. Almost all the fruits that ripen out of doors in this country are produced on the shoots of the former season's growth; therefore, I think, all varieties that produce their crop in this manner will prove suitable for open-air cultivation. I know of only two others that are possessed of this property of "first bearing" (as it is called in Fig countries), which I can recommend for cultivating in the open air; they are—Grosse Monstreuse de Lipari and De la Madeleine, both of which bear a good first crop, and very rarely the second.

Fruitfulness.—As a general rule, the smallest varieties are the most prolific. Of these, White Ischia, Black Provence, and Œil de Perdrix bear fruit as profusely as an ordinary Gooseberry bush. Some others, again, although they may never seem so laden with fruit at any one time, yet, through bearing continuously, produce an immense quantity during the course of the season. Of these the most prominent are perhaps, Brown Turkey or Lee's Perpetual, and White Marseilles.

Season of Ripening.—In order to keep up a rich and varied supply of the choicest fruits, the varieties must be selected according to their various seasons of ripening, so as to avoid a glut at one time, succeeded by a scarcity. When a house is devoted to the cultivation of the Fig in pots, and the collection is limited to, say, fifty plants, the following is my selection of varieties, and these will (supposing them to be started in March), keep up an almost continuous supply of ripe fruit from the end of June to Christmas. They are put into groups showing how they will give a supply of fruit for each month. *July:* White Marseilles, De la Madeleine, Gross Monstrueuse de Lipari, and Lee's Perpetual. *August:* White Marseilles, Lee's Perpetual, Versailles, De Lipari. *September:* White Ischia, Grosse Violette de Bourdeaux, Black Provence, Grosse Verte, Bourjassotte Grise, Col de Signora Blanca, De l'Archipel, and the second crop of White Marseilles and Lee's Perpetual. *October:* White Ischia, Black Provence, Grosse Verte, Bourjassotte Grise, Col de Signora Blanca, and Col de Signora Nera. *November:* White Ischia, Grosse Verte, Lee's Perpetual, D'Agen. *December:* White Ischia and D'Agen, which is the latest of all.

Chiswick. A. F. Barron.

AMATEUR FLORAL SOCIETIES.

WHEN properly conducted, floral societies act as a mainspring to the science of floriculture. We have, it is true, monthly meetings in many of our suburban villages, held chiefly in beerhouses, where flowers, &c., are brought forward for small prizes. This I could appreciate if more regard were paid to the quality of the flowers produced, and those only were allowed prizes that really merited them, and were the *boná fide* productions of the exhibitor. Such flowers as the Auricula, Polyanthus, Gladiolus, Phlox, Antirrhinum, &c., should be exhibited in trusses or spikes, not as single pips. A discussion should be raised on the merits of the productions. Latterly these societies have in a great measure forgotten their intended purport, and are made a pretext for drinking—some, at least, that I have lately visited are of this character. I naturally expected to hear some discussion, or to glean some practical information on the merits or demerits of this or that flower, or this or that particular method of cultivation, but must confess I came away grievously disappointed. What benefit can amateurs derive from such meetings?

Some years ago our Falstaff Inn used every Saturday to be the general rendezvous for the florists and amateurs of the neighbourhood; and there any amount of information might be had, while discussions on the principal methods of culture took place, opinions on any new or particular flower were freely given, and advice was as freely given to the young and inexperienced; but, alas! the change! There are no such meetings now, and the spirit of enthusiasm as regards floriculture is, so far as Manchester is concerned, sadly on the wane. The real enthusiastic old florists have one after one departed, and few rise up to fill the void. Formerly there used to be within a radius of a few miles round Manchester some scores of Auricula and Polyanthus growers; now you may walk miles in the same localities and find none; and I believe Mr. Chadwick, of Duckenfield, an amateur of over forty years' ardent and successful cultivation, is the only one that has any extensive stock of Auriculas. The taste for these lovely gems of Flora seems to have departed, never, I fear, to return.

Amateur societies might do much towards reforming these degenerating tendencies of the present age; but if any individual makes the attempt to bring about a reformation, he is denounced at once as having some sinister design, and is looked upon with jealous distrust. This shows too plainly the degeneracy of florists. Monthly periodicals conveying information in the thousand and one ways of floral and horticultural instruction, have one after another risen and departed, in consequence of a want of higher mental qualities among the craft; and unless some sound influential method be adopted by means of such societies as I have alluded to, to instil better tastes and better ideas, I fear that floral or horticultural improvement is not likely to make rapid strides.

One great drawback in this locality is the open system of exhibiting collected flowers. This has been so long practised, that it is next to impossible to get up an exhibition where the exhibitors show only their own *bonâ fide* productions. The general system is to get them how, or where they can. Manchester market supplies, in many instances, the greater part of the fruit at certain of our exhibitions, while flowers are collected for miles around, many parties taking prizes that have no garden at all. So long as this is practised, we cannot expect to hear of any great advancement in the cultivation of flowers. But why, I ask, should amateurs in this advanced age be dullards, lagging in the rear? Why should they sit idly by, and allow the march of improvement to flow on unheeded? If these societies would bestir themselves, and endeavour to have their meetings in schoolrooms, mechanics' institutes, &c., would appoint some popular gentleman or clergyman as president, and secure a few lady patronesses, &c., would try to inculcate a better feeling, and induce working men to adopt more praiseworthy pursuits, and would form small libraries of floral and horticultural works, and devote a little time and attention to their perusal, we might hope for a better state of things.

Winton, Manchester. JOHN WALKER.

MONTHLY CHRONICLE.

THE extended report on the condition of the Fruit Crops recently given in the *Gardeners' Chronicle*, is full of interest for the fruit-grower. The results stated generally are as follows:—Those fruits, such as Apricots and Strawberries, that ripen early in the season, have been both abundant in quantity and excellent in quality almost everywhere, the early period of their maturity having prevented them from experiencing the baneful effects of the drought. Apples, though on the whole abundant, are indifferent as to quality, falling off early, and in many places infested with grub. Plums are generally a light crop, from the early shedding of the fruit. Cherries have been grown in average quantities. Peaches and Nectarines are on the whole inferior; and in some places the trees have suffered severely. Small fruits, including under that designation Currants, Gooseberries, and Raspberries, have been plentiful, but there is a very general complaint as to flavour. Nuts are abundant and good.

—— It is announced that the managers of the Royal Caledonian Horticultural Society, have determined to hold a grand International Exhibition of Fruit, in Edinburgh, next year. The Show is to take place in the month of September, and to be open to all the world. The splendid success which attended the show held in the Scottish metropolis in 1865, gave a great impetus to fruit-culture, and similar results may be expected to follow that which is now contemplated.

—— The success of Exhibitions devoted to the display of Flowers and Plants grown by Artisans in grimy town thoroughfares, under the most discouraging circumstances as far as vegetation goes, or by cottagers in country or suburban villages blest with purer air, but otherwise with perhaps less means than their urban brethren, is most gratifying. From the slums of Westminster, the wynds and closes of Edinburgh, the alleys of Dublin, and such like places, we hear of these most praiseworthy efforts to brighten the squalor of the too often wretched habitations of the poor, and to add one little scrap of wholesome pleasure to the scanty store which our boasted civilisation allots to the labouring classes.

—— The propriety of Exhibiting Cut Flowers of many perennial subjects, as Phloxes, Pentstemons, &c., which always have an untidy if not moribund appearance at our summer shows, has lately been questioned, and it has been suggested that the production of the growing plant should be more encouraged. Take the Phlox, for example. It can be grown as a handsome well-furnished pot specimen, but if it be a difficulty, to grow and to convey to a distance a sufficient number of plants produced on this plan, at least a capital display might be made by plants in small pots, confined, it may be, to a single stem; and now that the sensible plan of showing all plants of moderate height on the ground level, and on a grass surface, instead of on high wooden stages, is being more or less generally adopted, a beautiful display might be made by groups of Phloxes alone, grown and shown in this simple way. Other hardy flowers, as Pentstemons, Double Stocks, &c., might be shown advantageously in the same way. A tent filled with Double Stocks in pots arranged parterre-wise, would be almost as attractive and popular as a tent full of Roses; and Antirrhinums also might well be grown and exhibited in pots.

—— A beautiful addition to our Hardy British Ferns, called *Polystichum angulare Pateyi*, has recently been made known. It ranks without question amongst the most lovely hardy Ferns yet discovered. Mr. Patey, of Milton, near Steventon, its fortunate finder, picked it up three or four years since, as a small seedling, on a Dorsetshire bank. The fronds are of a yellowish cast of green, triangular in outline from the length of the lower pinnæ, not quite symmetrical, but remarkably dense, the pinnæ and pinnules overlapping for nearly half their breadth, while the pinnules themselves are much developed after the finely-toothed style of cutting which occurs in Polypodium cambricum. They have thus a peculiar depth and leafiness, which, together with the excessively fine cutting and acute toothing of the margin, render it one of the most beautiful objects that can be imagined amongst Ferns.

—— In reply to a question as to the results of Steeping Timber in lime water at Chillingham Castle, Northumberland, Mr. Bowie, the gardener there, states that in the erection of the greater part of the buildings on that estate, between thirty and forty years ago, home-grown timber of various sorts, but more particularly Scotch Fir, was largely made use of; and for several years part of the timber for such purposes, before being used, had been put to steep in a large tank amongst lime water. Much of the timber so treated is at the present day (to all appearance) as sound as when first put up; whereas timber of the same sort and quality, grown in the same plantation, and employed in the erection of similar buildings, but not so treated, is fast going to decay.

—— Laxton's Supreme Pea proves to be a variety of high merit. It was raised from Laxton's Prolific, crossed with Little Gem. The seed when dry is of a dark olive green, and slightly indented. The plant grows about 3½ feet in height, is quite as early as Daniel O'Rourke, and bears remarkably fine large full pods, with about ten large well-flavoured peas in each. It is, unquestionably, a first-class early Pea, and will be a great acquisition.

—— A good addition to our popular Ferns will be found in *Lomaria gibba crispa*, a sport raised by Mrs. E. Cole & Sons, which is of dwarfish habit, and so densely leafy and wavy that the edges of the pinna take on a decidedly crisped appearance. Another variety of the same species, called *major*, has been raised in several places. It is very much larger in its growth than the true L. gibba, produces many fertile fronds as broadly leafy as those of a true Blechnum, those occupying the position of the normal fertile fronds being also less contracted than in the type; the plants, indeed, appear intermediate between L. gibba and Blechnum brasiliense. It has been shown by Mr. W. Dean, Mr. Nelson, and Mr. Westland. These varieties are quite distinct from the finely ramose and crested *L. gibba Bellii*, grown by Messrs. Osborn and Sons, and Messrs. Veitch & Sons.

—— Some fine examples of *Lilium auratum* have been bloomed this year. At Melchet Court, Mr. Cross had one bulb with three stems about 8 feet 6 inches in height, which bore respectively 81, 34, and 28 flower buds; besides four small offset stems, bearing eight flowers, making a total of 151. In the gardens at Quarry Bank, Allerton, another had five stout stems from 7 feet 6 inches to 8 feet high, three having 17 flowers each, and the other two 15 each; also nine smaller stems, from 3 feet to 4 feet in height, bearing amongst them 19 flowers, making 100 flowers. Mr. Tanton, of Epsom, had one with seven stems, on which was an aggregate of 52 flowers, while another later spike had 49 well-swelled buds. Mr. Tanton grows his plants in good peat, and does not shake them out when dormant; but they are allowed to start again in the same pot, and are shifted onwards in the same compost. Much of the failure that sometimes takes place in the cultivation of this beautiful Lily must be attributed to the division and shaking-out of the bulbs—operations which not only bruise, but actually sometimes break away the outside ripe scales, each of which forms in itself a reservoir of nutriment for future growth and support.

Obituary.

—— Mr. Richard Pearce, who had been for some years in the employ of the Messrs. Veitch & Sons as a collector of new plants, and who in that capacity had introduced many subjects of first-class merit, died on the 19th of July, at Panama, of bilious fever. He had recently entered into an engagement as collector with Mr. Bull, and had only reached Panama some ten or twelve days before his death.

GOLDEN CHAMPION GRAPE.

WITH AN ILLUSTRATION.

OUR figure of this new fruit—one of the grandest acquisitions of recent years—will be more eloquent in its praise than any words of ours. And yet in justice to the Grape and its raiser, we are bound to add that it is not only a decided novelty, but a novelty of the very highest excellence. Free and robust in growth, hardy and prolific in habit, magnificent both in berry and in cluster, and exquisite in flavour, what more can be desired? In truth, its merits are of so high an order, that they leave little to be wished for.

The bunch of the Golden Champion is moderately large, compactly-shouldered, and somewhat tapered, with a stout fleshy stalk. The berries are very large, with stout warted footstalks, some 2 inches long, and 3½ inches in circumference; they are generally of an ovate shape, but occasionally somewhat roundish, and they have a thin, pale yellowish green skin, which acquires a rich golden amber tinge with a slight bloom when they are fully ripe. The flesh is tolerably firm, but tender, with few seeds, very rich and juicy, with a flavour which, though compared with that of the Black Hamburgh, is, to our taste, much more saccharine and luscious than that variety, even when grown on the same stock.

This new Grape supplies, so far as can at present be judged of it, a long-felt desideratum—namely, a high-class free-growing white Grape, of hardy constitution, suitable for general cultivation as a companion to that best of all Grapes for general purposes, the Black Hamburgh. It was raised by Mr. W. Thomson, of Dalkeith, some five years since, from a seed taken from a Grape that was itself a cross between the Champion Hamburgh and the Bowood Muscat, and has been freely exhibited during the present year, when, among other awards, it has received a first-class certificate from the Fruit Committee at South Kensington. The foliage is very slightly lobed, and deeply and sharply serrated.

We are indebted to the Messrs. Osborn, of Fulham, by whom the Grape is being sent out, for the plate which accompanies these brief descriptive remarks. M.

CRATÆGUS TANACETIFOLIA.

A MAGNIFICENT specimen of this truly useful and ornamental Thorn stands in the pleasure grounds here, and for a greater part of the year it is an object of considerable interest. In early summer its downy grey foliage contrasts well with that of a darker hue; while about the end of May or early in June its large white blossoms are borne in such profusion that it has often been compared to a "mountain of snow." The blooming period being later than in the majority of large-flowering trees, renders it still more attractive. About the beginning of September its ornamental properties are very much enhanced by its fruit changing to a golden colour, which produces a rich and striking effect. So interesting a species of Thorn ought to be in every pleasure ground.

It may not be generally known that its fruit makes an excellent preserve; but here, through the skilful manipulation of Mrs. Vickers, the housekeeper, it is manufactured into one of the most delicious jellies of the kind that I am acquainted with. I send you a small portion two years old to taste. [It is excellent.] Some persons prefer it to Guava jelly.

This fine old tree seems to have required a support when in a young state, as it is now in a leaning position, which detracts a good deal from its dignity. It has 9 feet of clear stem, the circumference of which is 5 feet 6 inches; diameter of branches, 33 feet; height, 26 feet. As this has been considered by many to be the largest specimen in England, I should be glad to learn the dimensions of others through the pages of this journal.

Cobham Hall Gardens, Gravesend. R. Budd.

SEASONABLE GARDENING HINTS—OCTOBER.

AT the beginning of last month we had a return of the hot weather, for which the past summer has been so remarkable. This checked the growth of everything, and necessitated the liberal supply of water to late-planted Celery, Cauliflowers, and other vegetables. Though all active growth may be said to be at an end for this season, the present month is by no means a time of rest for the gardener, but one requiring great foresight and promptness.

All tender plants requiring it should forthwith be got under protection, as in our changeable climate we cannot fortell what sort of weather four and twenty hours may bring forth. The ice king may suddenly and unwarily come upon us; so it behoves us to be prepared for him. Pelargoniums and all softwooded tender plants out-doors should at once be put into pits and frames, where they will not only be safe but do well for the present, if care be taken not to overcrowd them, to keep them near the glass, to water only when necessary, to give plenty of air when the state of the weather admits of it, and to cover up well should frost set in. Chrysanthemums should now receive every attention; as long as the weather continues mild and open, they will do very well out of doors, but on the approach of frost they should be put under cover; they will succeed for a while in pits, but must not be set too close together, and should have all the air possible; the lights should be removed during the day, and in very mild weather may remain off during the night; the plants should be well supplied with water, and if in small pots and well rooted, should have a dose of liquid manure once or twice a-week. Hardwooded greenhouse plants should have air admitted abundantly to them by day, also by night as long as the weather continues mild; fire heat will not be necessary unless in case of very severe frosts. The main object now should be to keep the plants in as dormant and healthy a state as possible, neither allowing them to suffer from external influence, nor to excite them into unnatural growth by artificial heat.

The beauty of our flower gardens is now fast fading, but while the frost keeps away, and the plants and flowers remain fresh, attention should be paid to keeping everything neat by the timely removal of decaying flowers and foliage, by the mowing of the grass, and by sweeping and rolling the walks. All plants intended to be taken up and preserved during the winter should be attended to at once. Variegated and other Pelargoniums if plunged in pots may remain in the beds until severe frost is apprehended, when they can be speedily lifted and put under cover; by this plan the plants may be continued in the beds, and the garden may remain all the longer undisturbed, especially if the weather be open.

This is the best month in the whole year for transplanting evergreens. For though I have planted evergreens — and large plants too, in every month of the year with the most complete success, still I consider October the best time, and if the operation be performed in a proper manner, there will be fewer failures than when done at any other season. I would, therefore, strongly advise all persons intending to plant, to do as much of it as they can during the present month.

The hoe should be kept at work between all growing crops in the kitchen garden. The weather during the past month, being dry and frequently cold at night, has checked the growth of vegetables. Celery should be earthed up carefully as often as it becomes necessary. If not done last month, a large breadth of Cabbages for the main crop should be planted out at the beginning of the month. Cauliflowers sown in August should now be planted out under hand-glasses, and a quantity should be pricked out into frames for transplanting in spring. Large quantities of Lettuce should also be planted on south borders, and at the foot of south walls. The main crop of Potatos should be lifted on a dry day; they should be sorted and stored away when quite dry. Towards the end of the month the Asparagus beds may be cleared of their haulm; they should then have a good covering of manure, and some soil from the alleys should be placed over it. All ground that becomes vacant should have a coat of manure, and whilst dry should be thrown up into steep ridges.

This is also the best month in the whole year for planting fruit trees. All necessary preparations should be made at once, and the trees planted as soon as possible. It is also a good time to select trees from the nurseryman's stock, though this should be done even before this; those who defer planting until spring, and neglect marking their trees in the nurseries, not only leave the planting until the very worst season, but have also to be content with inferior plants, which scarcely any after-management, however perfect, can make good trees of. All fruit has ripened rather earlier than usual this season. Pears and Apples should be gathered most carefully, especially the late-keeping sorts, and stored away in the fruit room with much care.

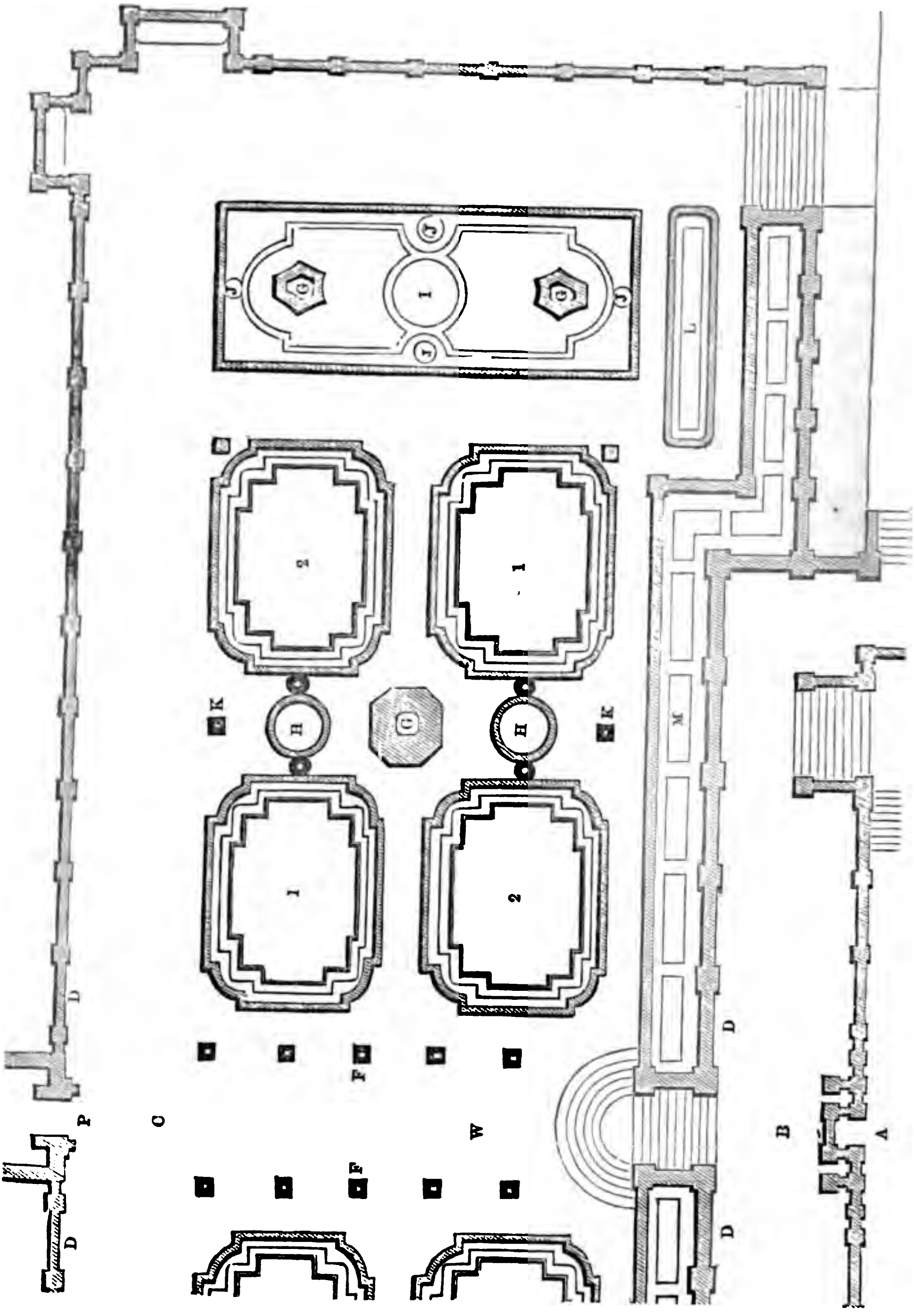
Stourton. M. Saul.

ARCHITECTURAL AIDS TO GARDENESQUE EFFECTS.

THE twin arts of Architecture and Gardening are indissolubly linked together. The garden is the lower base of the house, and the house should be the crown and glory of the garden. The completion of a domain in the highest perfection requires either that the two arts— those of house-building and garden-making, should be combined in the same individual, or that the two artists—the landscape gardener and the architect, should work together. The disseverance of these two has marred many a scene of beauty; their combination has moulded into harmonious loveliness most of our finest places. When possible the two artists should not only work in harmony, but simultaneously. The plans of the house, and designs for the garden, should be presented and decided upon together. In this way there will be a great saving of time; the rough groundwork could proceed with the heavy building, and by the time the house was finished, the garden would be furnished. But another great advantage would be secured by this simultaneous action. The landscape gardener would be more likely to work in harmony and congruity with the architect, when the two worked at the same time upon the same place. The proprietor would have the advantage of the criticisms of the one, upon the plans of the other, and the works of each could hardly fail to be the better for being, to some extent, the out-growth of the genius of both.

Such simultaneous action might likewise prevent such violent contrasts as we often see between the architecture and the landscape. I have seen undressed Nature, with her ragged tattered robes of Whin, Broom, and Brambles, allowed to approach the highly finished base of an Italian mansion; while far away in some secluded nook, where Nature might have been easily wooed, and sweetly enjoyed, I have come upon a highly-finished Italian garden, with its imposing statuary, sparkling fountains, and urned vases. A good architect would at once reverse such a disposition of artistic material, and no landscape gardener conversant with the rudiments of architecture, could make such mistakes. In the interests of the highest art, I ask that the jealousies that have too long existed between architects and landscape gardeners should cease. The latter should yield up to the former at least as much ground as he considers requisite to impart the necessary breadth and massiveness of base to his house. The house in virtue of its dignity claims for itself a certain width around it as a horizontal foundation, and over this area at least the right of its builder ought to extend. Instead, therefore, of being jealous of the interference of architects, we ought to welcome them into the garden. Great architects will know, and lesser ones must be taught, when to retire.

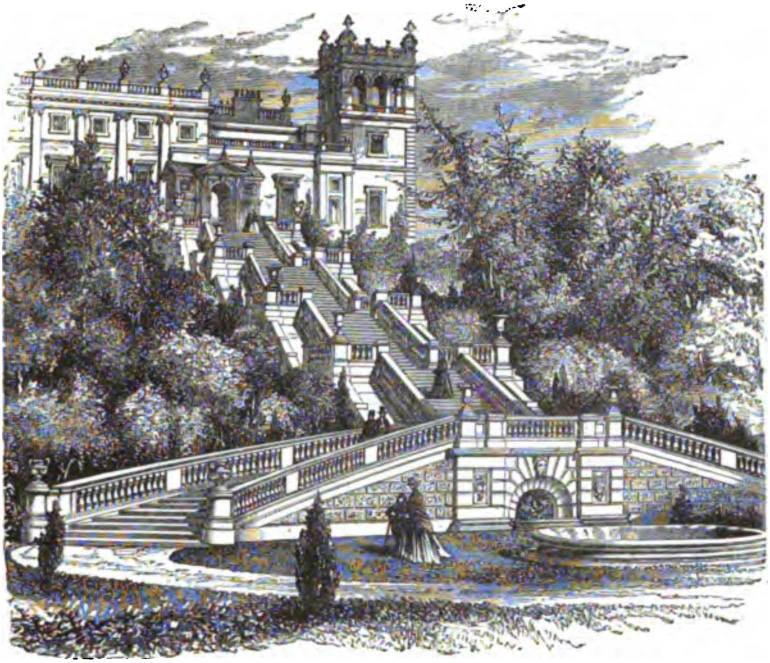
Perhaps one of the best modern instances of an architect's work in the garden is to be found at Shrubland Park, near Ipswich, in Suffolk, the noble seat of Sir George Broke Middleton, Bart. Several years ago the late Sir Wm. and Lady Middleton called in the late Sir Chas. Barry to improve and add to Shrubland. It is a noble Italian building, and this style of architecture requires more than most to be supported and supplemented with gardens. Sir Charles's work, therefore, extended from the house to the garden; and I purpose here giving a brief account of what he did. The site of Shrubland is most commanding. It stands on the top of a beautiful hanging hill, and commands the sweep of a very rich agricultural valley on the garden front, with the park on the other side, fine woodland scenery to the right, and the park to the left. It has an elevation of from 200 to 300 feet above the bottom of the valley, in which the river Gipping creeps along like a silver snake in the far distance. The house on the garden side has three different bases. First, there is the upper terrace (A) next the mansion, with its flight of steps at each end. Next follows the second and wider terrace, with its central flight of steps (B). Each of these terraces is supported by a massive retaining wall that imparts great dignity and grandeur to the mansion. Then follows the balcony garden (C), of which, as of the terraces, one half is shown in the annexed plan. It is bounded on the further side from the house by a highly ornamental wall (D), which is pierced at (P) with a lofty arch leading to the finest flight of steps, probably, that has ever been seen in any English garden. The balcony garden is likewise highly architectural. On each side of the centre walk (W) leading from the lower terrace to the arch at the top of the stone steps, permanent imitation tubs are placed, filled with round-headed Laurels in imitation of Orange trees. On each side also are four massive beds (1, 2), filled with Scarlet, Zonal, and other Pelargoniums, the corresponding beds on each side being alike. Two small beds (H) are introduced to connect the large ones together in pairs; while large massive open-topped empty stone vases or baskets occur at G. The small beds are filled with Coleus Verschaffelti; while I denotes the position of small trees, and J spiral Junipers. The long pieces of turf at the end of each group of four beds is surrounded by a double line of white sand, that has a cleanly sparkling appearance. The long bed (L) is filled with Pelargoniums, and other beds of Pelargoniums (M) contain groups of three or five Hollyhocks towering up at regular intervals



PORTION OF BALCONY GARDEN AT SHRUBLAND.

against the walls. These are most useful plants for association with architectural lines, and have a fine effect here.

Passing through the archway at P we rest upon the top of the steps (of which through the kindness of Mr. Murray we are able to give the accompanying sketch). They are grand and massive in the extreme, consisting of a hundred or more steps 12 feet wide, with four rests 21 feet wide, and diverging to the right and left with twenty steps at the bottom as shown in the sketch, down to the panel garden. The steps are finished off with a heavy balustrading and coping, just outside which, and in a line corresponding with the width of the rests, a low wall is carried up from top to bottom. Upon this wall, between each rest, three vases profusely filled with dense masses of Scarlet Pelargoniums, are placed. The effect of these sloping lines of scarlet against the white stone is startlingly beautiful. Beyond this closely-clipped shrubs, chiefly Box, creep up to the vases, so that the white stone is set in a framework of green, fringed next the steps with a band of scarlet. These shrubs are mostly cut closely down to the level of the base of the balustrade. But a novel effect is produced by allowing the Box to rise to the top of the balustrade at each rest, and also by permitting some Junipers, Arbor-vitæs, &c., to tower up far above the clipped shrubs.



The panel garden at the bottom is likewise decidedly architectural. It has a fine fountain in the centre, and its semicircular boundary is a highly ornamental wall, pierced opposite the great steps with an archway similar in style, although less massive than the arch on the top of the steps. Beyond this wall a wild dell begins, spanned by one or more rough stone bridges, and here the architect gives up the reins to the landscape gardener. The builder's labour ends, and the gardener's proper work begins. To the left of the panel garden a series of geometrical and other gardens begin, and are carried along for a great distance, ending in the maze. In front of the great steps masses of shrubberies, and stretches of lawn, with irregular mixed beds sweep down to the lake. On the far side of this, a belt of wood bounds the pleasure ground, and separates the series of gardens from the rich agricultural country that stretches away for miles outside. Your space, however, is too limited for any general description of these gardens.

The point I wished specially to direct attention to was the importance of architecture as an aid to landscape or ornamental gardening. I had known Shrubland for nearly thirty years. It could never be aught but beautiful, but this grand stonework of Sir Charles Barry's raised its character as a work of art, at least 500 per cent. It gave it a richness, a commanding dignity, which nothing else could have imparted. The size, number, and length of the steps, the beauty of the different walls, the chasteness of their finish, the massiveness of the copings, the number and costliness of the vases, impart a sculpturesque character, that adds immensely to the dignity and grandeur of the whole garden. Seldom or never has dead stone, adapted by the force of rare genius and exquisite taste, done more or better to enhance the effect and increase the beauty of living flowers and shrubs, than at Shrubland. And amid all the monuments that have been self-erected to the genius of the great architect, now no more, no mean place ought to be assigned to the balcony and panel gardens at Shrubland, and the noble flight of steps that join the two together.

Hardwicke. D. T. Fish.

ZONAL PELARGONIUMS FOR POT CULTURE.

NOT an exhibition is held in any part of the country in the autumnal season at which Zonal Pelargoniums do not form a prominent feature. This is doubtless, chiefly owing to the facility with which they may be cultivated, and the wide range of colour which they furnish. As yet the Nosegay section has not generally formed a distinct class, but, that they must soon be so placed is plainly evident; and judging by what I have seen of the newer kinds at Chiswick and elsewhere this season, I feel strongly convinced that the old Zonal section must look to it, or otherwise, whether for bedding or pot culture the Nosegays will altogether supplant them. There is a certain symmetry of bloom in many of the older kinds, to which the Nosegays can scarcely hope to attain; but we all have a weakness for abundance of flower, and rich masses of colour, two conditions which the latter furnish in the largest degree. I wish, therefore, to say a word in favour of my older friends by commending to all growers of this beautiful class of plants Mr. G. Smith's Regalia, a variety that I have grown as a pot plant this year, and which I must pronounce to be the most gorgeous and free-blooming of all the Zonal section I have ever seen. The individual pips are as large and somewhat resemble those of Roi d'Italie, but possessing a much brighter rosy tint; the habit of the plant is short-jointed, and an abundance of trusses of large size are thrown up. I have now a plant in full bloom not more than 14 inches across at the top, and it has eighteen fully expanded trusses and twelve others just about to open. Regalia has only to be grown to become one of the most popular of our exhibition Zonal Pelargoniums. A. D.

TROPÆOLUM POLYPHYLLUM.

THE reference at p. 195, to the elegant little Tropæolum speciosum, has reminded me of another species as rarely met with, and as well deserving cultivation. I allude to the *T. polyphyllum*, introduced from Chili, according to the catalogues, as long ago as 1823. Unlike the T. speciosum, it has a tuberous root, but is equally hardy, and like it, luxuriates only in the open border. The partial disappearance of both species from our gardens is probably owing to the attempt to cultivate them in pots, for which they are ill-adapted.

Planted in soil of a loamy character, the T. polyphyllum throws up in early summer, numerous shoots clothed with distinct-looking digitate glaucous foliage, and terminated by long racemes of showy deep yellow flowers, of medium size. After blooming, the stems quickly disappear in time to allow of the space being covered with transplanted Asters, and other autumn-flowering annuals.

Ipswich. W. THOMPSON.

SPRING GARDENING.

THE taste for Spring Gardening is rapidly spreading. The stone has been cast upon smooth water, circle succeeds circle, and will, doubtless, continue to do so until the movement is felt on every side, at wide distances from the central motive power. Cliveden, Belvoir, and Hyde Park have demonstrated to those who would see, and read, and learn, the perfect practicability of realising a beautiful garden ablaze with flowers of every hue in the cheerless months of March and April.

The managers of these gardens are rightfully entitled to be considered the pioneers of spring gardening; by them the ground has been cleared: by them the plain path indicated: by others recognised and entered on.

Henceforth every good garden, when the family resides in the country in spring time, must have its beds of evergreens and flowers at that season, instead of the present bare unmeaning plots of dull vapid earth. Flowers, at all times enjoyable, at all times exhilirating, are doubly so in spring from their greater rarity, and from the bright contrast they present to the desolation that reigns around.

An extraordinary summer like that of 1868 opens to the active and observing mind many fresh avenues of thought. The summer just past has been more favourable to the March and April garden, than to that of July and August, as many a worker on light dry soils especially knows to his cost. Such should not hesitate one moment in seizing on this new idea, and in substituting for the dull unsightly beds of earth, too prevalent, alas ! in spring, masses of bright and beautiful flowers.

Happily the task is neither difficult nor expensive; the plants used are frost-proof and cheap; the labour is the great item, and it would not be fair to represent that there is not an increase under this head; but except where carried out on a very extensive scale, spring gardening need not entail any heavy additional cost even here.

In all spring gardening, bulbs must form an important part of the material; and they, indeed, are not costly. Hyacinths (red, white, and blue). may be bought at 21*s*. the 100; Tulips (red, white, and yellow), at from 4*s*. to 12*s*. per 100; and Crocuses (white, yellow, purple, striped), at from 1*s*. 6*d*. to 3*s*. per 100. Then there are Jonquils (yellow), Snowdrops (white), Anemones (blue, white, scarlet, and variegated), none of them beyond the reach of moderate means, and numberless others calculated to secure diversity and to combine in forming a pleasing and harmonious whole.

Of annuals and biennials to be sown in summer and autumn, or purchased at a low price in the seedling state, there is a rich and varied store. Of these Lunaria or Honesty (purple), Wallflower (three varieties, yellow, dark, and brown), Silene (three varieties, white, pink, and red), Myosotis (two varieties, blue and white), and Saponaria calabrica (red), are among the most effective. There are also Candytufts, Clarkias, Calliopsis, Collinsias, Erysimums, Eschscholtzias, Gilias, Godetias, Leptosiphons, Limnanthes, Nemophilas, Venus' Looking-glass, Virginian Stock, &c., but these according to my experience do not succeed after transplantation with that certainty which is necessary to insure a complete and perfect garden. They are best sown on the spot where they are required to bloom.

Spring-flowering perennials are also numerous and good. Alyssum (yellow), Anemone nemorosa plena (white), Anemone apennina (blue), Arabis alpina (white and variegated), Aubrietias of sorts (lilac), Bellis or Daisies (white, red, and rose), Hepaticas (red, white, and blue), Iberis (white), Pansies (various), Phloxes (various), Primroses (crimson, lilac, white, and yellow), Polyanthuses (various), Alpine Auriculas (various), Saxifraga granulata plena (white)—these are a few only of the most showy perennials, the number being almost without end.

In these brief remarks, intended to be merely suggestive, the endeavour has been to bring into prominent view a few of the best things only; but with these alone a rich, massive, and perfect display of flowers may be had at small cost in March and April. A more elaborate and beautiful garden may be built up with rarer and more costly things, not, however, to the exclusion of these, but in addition to them, if the taste of the proprietor should pronounce this to be desirable.

Paul's Nurseries, Waltham Cross, N. WILLIAM PAUL.

THE PREMIER RUNNER BEAN.

I AM pleased to find that this really promising and valuable vegetable has received at the hands of the Fruit Committee the honours it so well deserves. I have grown a quantity of it this season, and in spite of the dry weather find it to be all that could be desired. It has a very even and short-jointed habit of growth, averaging in height about 5 feet. It commences bearing close to the ground, and continues to do so freely to its extremities. The bloom is white in colour, and the pod closely resembles in character that of the Negro Dwarf French Bean. I believe it will prove exceedingly useful for market purposes, as well as a valuable addition to our present somewhat limited stock of summer vegetables.

A. D.

NEAPOLITAN VIOLETS.

[WHEN visiting Mr. Dore, of Juniper Hall Gardens, last spring I was very much struck with his fine Violets; they were in the finest possible health, and blooming most profusely, the individual flowers being splendid examples of Violet cultivation. Mr. Dore has kindly forwarded me his mode of cultivation, and its simplicity combined with the results I saw, induce me to place it before the readers of the FLORIST AND POMOLOGIST.—WM. GREENSHIELDS.]

IN April, say about the middle of the month, I choose a piece of ground on a north border, which if not already in good condition must be made so by a liberal addition of well-decomposed manure and leaf mould, such as can at most times be obtained from old Melon beds, &c. I incorporate this with the soil of the border, to the depth of a foot or 18 inches. I then select some of the best rooted runners from the previous year's plants—these will be well rooted from having been carefully laid, and kept clean during the time the parent plants were in bloom. They should be planted in rows, 18 inches by 12 inches apart, which will allow the soil to be kept open and clean—a point of great importance.

The runners above spoken of are selected in July or August, about four or five to a plant; they are carefully laid in the soil, and by the time the plants are taken up, early in October, they are nicely rooted. I then take the plants up with a good ball of earth to them, and place them, with the young rooted runners, in an old Melon pit, as near the glass as possible. If there is a little warmth left in the bed of the pit, they will root and establish themselves in their winter quarters all the sooner; but they dislike strong heat. They are plunged rather thickly in the pit, just allowing room enough between the plants for the runners to be relaid—these runners being the young plants for the following year. They delight in well-rotted leaf mould, of which I use a good portion to bloom them in.

Though frost will not kill them, I find that by keeping it from them they bloom more profusely and throw up finer flowers. I, therefore, in severe weather give extra coverings, and I seem always, without any difficulty, to gather abundance of blossoms from November till I plant out in April.

The Gardens, Juniper Hall, Dorking. WM. DORE.

THE GLADIOLUS IN 1868.

FOLLOWING the example set by Mr. Tillery, I subjoin my opinion of the Gladioli sent out by M. Souchet last autumn, and which have just bloomed with us for the first time. I think it may be affirmed they are more remarkable for quantity than quality; indeed, I am constrained to say that several of them ought never to have been sent out from an establishment like that of M. Souchet. Unless many of them have done better elsewhere than here, they will scarcely add to the well-earned reputation of that veteran raiser. Nevertheless, although we may look in vain for a Meyerbeer or a Shakspeare, we shall find some valuable additions to the good sorts already in cultivation.

The following is a record of my experience:—*Bernard de Jussieu*, shaded violet purple on light ground, new and beautiful in colour, and so far an acquisition; but neither in form, substance, nor arrangement of flowers on the spike can it substantiate its claim to be considered a first-class variety. *Eugène Scribe*, pale rose flamed carmine, a good honest sort, with plenty of substance, and apparently to be depended on. *Etendard*, blush white flamed lilac, a giant both in flower and spike, without a single good point to recommend it. *La Fiancée*, a very pretty delicate white variety. *Moliere*, cherry red, with white throat, moderately good. *Mozart*, pale rose flamed carmine, white centre, a striking flower, the blooms well set on a handsome spike. *Norma*, nearly white, one of the best of the year. *Princesse Alice*, lilac shaded rose, white throat; if I have seen it in its true character, this is a much over-rated sort. *Rossini*, dark red, with white stripe and throat, noble spike, one of the best. *Semiramis*, lovely in colour, but irretrievably bad in form; the advent of this and some of the others was heralded by a somewhat overpowering flourish of trumpets, expectation was consequently raised to its highest pitch, and anything like disappointment is always the more keenly felt under such circumstances. Let brilliancy of colour by all means have its due weight, but it must never be allowed to supersede, nor even take precedence of form. *Stella*, very bright and effective, but too much like a star in shape. *Thunberg*, a large and rather imposing flower, somewhat in the way of McMahon. *Ulysse*, a charming variety, combining good form and great brilliance, altogether new in colour—soft rosy lilac with large white throat; without a doubt the best flower of the season. *Uranie*, according to a French catalogue now before me, the dearest sort of the year, and certainly one of the worst; I have seen it growing in different places, and it has been bad always.

There yet remain other eight or nine sorts newly sent out by M. Souchet, but I really cannot find a good word for any of them. I hope they have done better in other hands. Of the fourteen described above, they who grow for exhibition may require all, except *Stella*, *Etendard*, and, perhaps, *Uranie*. The best three are, in my judgment, *Ulysse*, *Norma*, and *Rossini*, in the order in which I have named them. Then come *Mozart*, *Eugène Scribe*, and *Princesse Alice*. The experience of another year may cause me to alter my opinion, as the experience of this has caused me to do with one or two of last year's flowers. *Princesse Marie de Cambridge*, which in 1867 bloomed so ill with me as to be almost worthless, has this year been all that could be desired; while *Adolphe Brongniart*, then quite the gem of the season, has been hardly second-rate as it has flowered with me and others this year. With respect to other varieties of 1867, I see little reason to alter my opinion given at p. 58. If anything, I would award higher praise to *Thomas Moore* and *Felicien David*. The following older sorts have been very fine this year:—*Belle Gabrielle*, *Charles Dickens*, *Clemence*, *Dr. Lindley*, *Duc de Malakoff*, *Eleanor Norman* (Standish), *Eurydice*, *Fulton*, *Galilé*, *Imperatrice Eugénie*, *James Veitch*, *John Waterer*, *Madame Domage*, *Madame Eugène Verdier*, *Madame Furtado*, *Madame Vilmorin*, *Maréchal Vaillant*, *Marie Dumortier*, *Meyerbeer*, *Newton*, *Penelope*, *Princesse Clotilde*, *Raphael*, *Shakespeare*, *Stephenson*, and *Walter Scott*.

Ash, Sandwich. J. S.

SALVIA ARGENTEA.

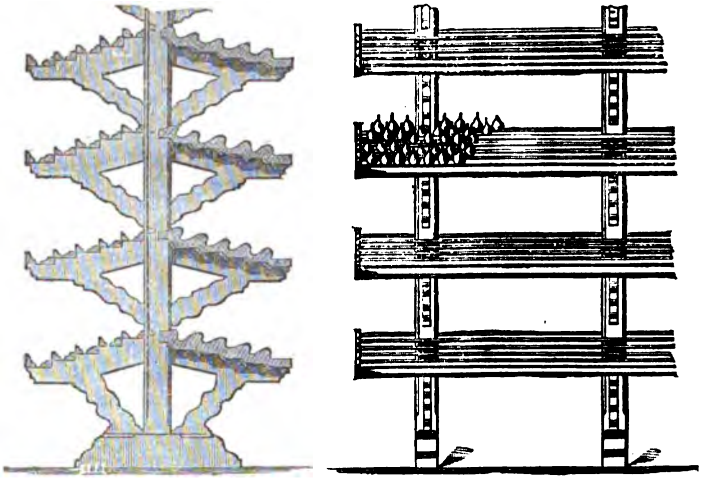
THIS woolly-leaved biennial I have found to do well during the past season, and where white-foliaged plants are in demand I can with confidence recommend it. It is of the most simple cultivation. The seeds should be sown in March in a gentle heat, and as soon as the plants can be handled they should be potted-off into small pots, and grown on gradually until bedding-out time. It is necessary to take care to harden the plants off well. This season I have planted it in a small bed with Coleus Verschaffelti, and the effect was very good; but I purpose another season to employ it principally for edging and line work, as for such purposes it is admirably adapted.

Wrotham Park, Barnet. John Edlington.

IMPROVED FRUIT SHELVES.

WHATEVER conduces to the better preservation of choice dessert winter fruits—Pears, Apples, &c., or leads to improvement or increased convenience in the arrangements of a fruit room, is worthy of adoption; and such we believe to be the Fruit Shelves, met with by Mr. Robinson during his French rambles, in Baron Rothschild's garden, and which are represented in the subjoined figure, for which and the annexed particulars we are again indebted to the handy little volume of *Gleanings*, already noticed.

The Shelves in question, which are of oak, supported by oak uprights, instead of being fixed, as usual, round the sides of the fruit room—though they might be so placed—are arranged in several sets along the room; they are just wide enough to hold five rows of Pears on each side, and are placed at such a slope that the fruit can be readily seen without being handled, or in any way disturbed. This alone is a great advantage; but another has been at the same time secured. The slightly concave space upon which each line of fruit rests, is made of two laths placed a small space apart, so that the air can flow up between the fruit, no two of which are allowed to touch each other. Thus it is found that they keep in a



much better condition than occurs in many of our fruit rooms, where they are to be seen packed so closely together, that the good are liable to be tainted by the bad. "A more pleasing sight," observes the author, "could not be presented to the lover of a garden—the successive shelves of splendid fruit being so arranged that every individual Pear could be examined without touching one." We agree that in the case of a fruit requiring so much nicety of judgment and attention as the Pear does, every individual of which must be eaten at the right time, this is a great gain. M.

PHLOXES IN POTS.

I AM very glad to see the hint thrown out in your Monthly Chronicle (p. 215), respecting the exhibiting of Phloxes in pots. I had long been puzzling my mind with various plans for a stand for exhibiting cut specimens, every one of which had some fatal objection or difficulty, and I really know of none better than the one now suggested.

I confess I felt ashamed of my Phloxes as shown at the Botanic Gardens last month, on the second day; and much as I admire these flowers, I felt inclined to recommend their being excluded from exhibitions, unless some better plan could be adopted to keep them alive, for when cut their beauty is gone in a few hours.

I therefore take pleasure in responding to the hint, and would recommend their being planted in 6-inch pots, as early in May as convenient, in some nicely prepared soil, having fully one-third of leaf mould in it. The smaller plants may be selected, those not having more than two or three stems. These, when potted may be all plunged in a bed and grown out of doors as usual, and should have liquid manure once a-week. There will be several advantages in the system. Thus in such a season as the past, they could be easily removed to a more shady situation. Then it would secure the more extended culture which I consider they merit, on account of their long continuance in bloom. Mine have been in flower from the middle of June, and still give a fine display, while many spikes have not yet opened. The collection is certainly rather extensive, containing over an hundred varieties, all good ones. Another advantage would be the opportunity afforded at the time for disposing of any one wished to part with. In the carrying-out of the plan I am of opinion that they should be secured neatly to light sticks painted green, and should have their correct names legibly written on a neat label.

Pentstemons, I have never seen exhibited in this locality; indeed but few are cultivated. I feel convinced that the improved ones deserve to be encouraged; but, like Phloxes they are not well calculated for exhibition as cut specimens, though they would make a fine display if grown in pots.

I will not, however, venture an opinion on their treatment, as I have never grown them for exhibition, and should be thankful if some one who has had experience with them, would give a few hints on their culture.

Antirrhinums might also be made to form an interesting feature at our summer exhibitions, if cultivated in pots, as suggested for Phloxes, care being bestowed to select the finest only, those having rich colours, and large flowers closely set on the spike.

I trust the Committee of the Botanic Gardens here, may be induced to offer prizes for these subjects in pots at the exhibition to be held next summer in connection with the Royal Agricultural Society, so that Manchester may have the honour of introducing the improved system.

Winton, Manchester. JOHN WALKER.

CONCERNING SPECK UPON APPLES.

POMOLOGISTS in general, even those who have given but little attention to the keeping of Apples and Pears, are too well conversant with the various forms of "speck," and with the great injury which accrues to fine specimens of fruit, consequent upon its appearance, however minute the speck may originally be. It is not my intention to advert to the subject in a physiological point of view, nor to discuss the question whether such appearances are due to inherent weakness, or general decrepitude in the tree itself, or, being simply superficial, are the result of the attacks of fungi which ultimately worm their way to the very core of the fruit. I am none the less convinced, however, that the disease—and it is nothing else—may be greatly mitigated, and in certain instances totally overcome. It cannot fail to have been observed, that unlike those instances in which the large blotched disfigurations, known as spot, have been formed, at or about the time of the formation of the fruit, and have grown and spread with it as it increases in size, the "speck," to which I especially refer, seldom makes its appearance until the fruit has attained its full proportions, mostly in fact after the lengthened and colder nights of early autumn have set in, and condensation has become so great as to envelope it throughout the night in a cold vapour bath. It is to this influence, intensified manyfold by wet dripping weather, that I attribute the origin of "speck"—originally so harmless in appearance, but ulteriorly causing the fruit to rot long before the close of its customary keeping period.

Dumelow's Seedling (Wellington), Cockle Pippin, and some other sorts are much affected by this disease, and it is to such varieties therefore that I would more especially refer, though the point remarked upon has direct application to most other late-keeping varieties. My advice is, that all such kinds should be picked and housed at the earliest possible moment after they become sufficiently ripe, a period I need not remark which varies much according to sorts and seasons. When housed the fruit must not be laid too thickly, but should undergo the first sweating with full exposure to light and air; in fact, when properly performed this first sweating will be the final one; while to sweat the fruit dry thus quickly, will materially enhance both its flavour and appearance, and admit of its being placed more thickly, if need be, afterwards. Fruit gathered at the "nick of time," and thus treated, if tested by the side of other fruit allowed to remain longer upon the trees in the humid weather of autumn, will be found to be speckless in comparison.

Such sorts as Court Pendu Plat, the Gooseberry Apple, and Sturmer Pippin, which require to hang to the last, should always be fully exposed to the full light of sun and air, though sheltered from superficial rains, for a week or so before ultimate storing takes place. This is the more needful where the now very general plan of keeping fruit rooms dark and airless is pursued. To allow fruit to sweat in a close air-tight room, is to permit its unwholesome exudations to become attached to its whole exterior surface, and these are not readily removed by the process of wiping with dry cloths often resorted to; while certainly such a practice is altogether at variance with that provision for perfect sweetness and cleanliness, which are so necessary to the keeping of all substances liable to decay, fruit more especially.

Digswell. WILLIAM EARLEY.

THE HOT DRY SEASON OF 1868.

THE weather during the past month has produced a marvellous change on the face of Nature. Previous to that, the extreme heat and drought had converted the parks and meadows into a brown and arid waste; now, the welcome rains have revivified them, and as I anticipated, have had a very beneficial effect upon the late fruits Apples and Pears especially, have grown out far beyond what they promised at one time. The high winds on the 22nd of August blew down many thousand bushels in this locality.

The effect of the season on the growth of fruit trees is very favourable indeed. Trained trees are looking very healthy, and the wood is ripening off well, while the growth of the trees in the open quarters is unusually short, stocky, and fruitful-looking, and those who have kept the young shoots judiciously thinned out will find an unusual supply of well-ripened wood. I say judiciously thinned, because I am more than ever convinced that we very often overdo this, thinning out and defoliating too much. I acknowledge the great benefit to be derived from the practice as a corrective of excessive luxuriance, by its indirect action on the roots, but at the same time I feel sure that an abundant foliage is absolutely necessary to the perfect development and maturity of the fruit. Peaches and Apricots may with great propriety have the growth well thinned, and the fruit exposed towards the time of stoning, but from that time until the time of ripening-off the great object should be to encourage an abundance of healthy foliage to break the fierce rays of the sun, and enable the fruit to ripen gradually. Then, with perfect maturity we may expect perfect flavour.

It is at the season of ripening that many persons, conceiving that the fruit requires direct sunlight, thin out the shoots and remove the foliage so as to thoroughly expose it. This in a cold and moist season might answer well, but in such a season as the one now past would be very bad practice, causing the fruit to ripen prematurely and to be deficient in size and flavour. There can be no doubt about the sun's agency in the perfect maturation of these fruits; but when we consider that several times during the past season a Fahrenheit thermometer suspended on a south wall indicated 147°, we can at once conceive how grateful foliage must be to the fruit, and understand why fruit with abundant foliage should be so much larger, and more equally ripened than where it is exposed to the full force of so great a heat. As soon, however, as the fruit is gathered, the growth should be well thinned out, and the permanent shoots nailed in at once.

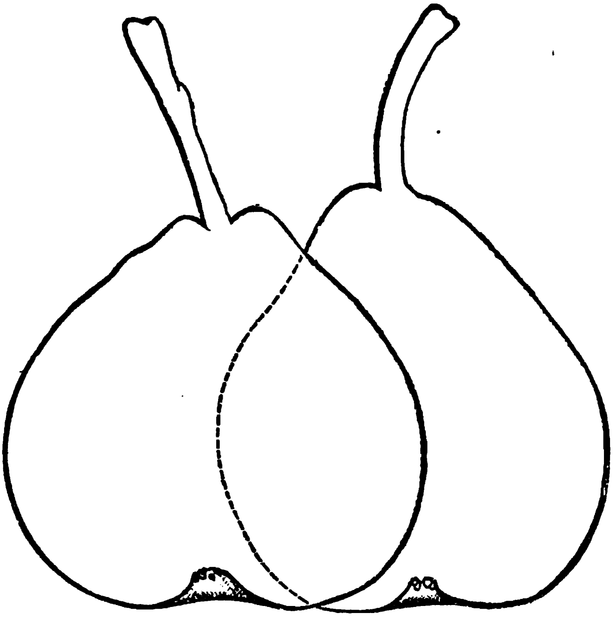
The effect of the season on flowers has been very various. Previous to the violent thunderstorm at the end of July the bedding display was superb, but since then hardly anything except Pelargoniums have recovered their beauty; Calceolarias especially have died off by hundreds; blue Lobelias are nearly dead, and Verbenas very shabby. On the contrary, foliage plants have flourished beautifully, and have proved quite a redeeming feature.

One word as to the temperature during the season. Commencing with May, the highest point attained here was 85°, in June it reached 88°, and the maximum 93° was attained on the 22nd of July. The thermometer from which these indications were taken has remained suspended in the same place for nearly 50 years, and the situation has been pronounced by scientific men to be well adapted for correct indications. During those years it has never before attained to 93°, the highest being 92° on the 15th of July, 1825. August was comparatively cool; though in the first week, 88° was registered; while in the first week of September 85° was attained.

Redleaf. JOHN COX.

SUMMER BEURRÉ D'AREMBERG PEAR.

OUR contemporary, the *Journal of Horticulture*, gives the subjoined particulars of this variety, which it recommends as a useful early Pear:—We have often heard from the lips of Mr. Rivers a flattering account of this new seedling Pear of his, which fruited for the first time two or three years ago. Fortunately this season the fruit has reached us in perfect condition, and from those now before us we furnish a figure and description. The size, as will be seen, is not large, and the form is somewhat turbinate or short obovate, and even in outline. Skin of a lemon colour, slightly veined with cinnamon-coloured russet, with a patch of the same here and there, particularly round the stalk. Eye very small, frequently wanting, and set very deeply in a deep and narrow basin. Stalk upwards of an inch long, and inserted in a small round cavity. Flesh tender, melting, juicy, brisk, and with a fine, sprightly, vinous, and perfumed flavour.



The fruit does not keep long, as it rots at the core shortly after being gathered; but the variety is a desirable sort at this season (beginning of September), and if gathered before it is perfectly ripe it will, no doubt, keep much longer after being gathered. The Summer Beurré d'Aremberg was raised by Mr. Rivers from the old Beurré d'Aremberg, and the tree forms naturally a perfect pyramid, is hardy, and a great bearer.

NOVELTIES, &c., AT FLOWER SHOWS.

TWO new and distinct double-flowered *Pelargoniums* have recently received first-class certificates. One, *Victor*, shown by Mr. George Smith, Islington, with very bright orange scarlet flowers, quite in advance of anything in the same hue of colour; the other, *Sparkhill Beauty*, which was shown at the Leicester Meeting of the Royal

Horticultural Society by Mr. James Tomkins, a nurseryman of that district. The latter variety is in the way of Madame Lemoine.

At this Leicester Show Mr. C, J. Perry, of Birmingham, received first-class certificates for the following fine new Verbenas :—*Mrs. Reynolds Hole*, a most beautiful variety, the flowers pure white, with a bright crimson centre ; *Mrs. Perry*, light blue with large light eye, the flowers when old being quite free from that stained appearance that disfigures so many similar varieties ; and *Spot*, a lively bright pink flower, with carmine centre. These are of fine quality, and will fully sustain Mr. Perry's reputation as a Verbena raiser. A fine Zonal *Pelargonium*, called *Delicatum*, shown by Mr. W. Cunningham, Burton-on-Trent, received a first-class certificate. It is a fine addition to the salmon-coloured kinds, as the flowers are heavily suffused with that colour, and there is a distinct ring of carmine round a white eye; the flowers large, stout, and finely formed. The same award was made to two fine Gold and Bronze varieties from Messrs. Downie Laird and Laing, named *Harrison Weir* and *Crown Prince ;* both have large and stout well-formed leaves, with lively bronze zone on a golden ground.

The way the Petunias in pots were grown that were exhibited at this meeting really took people by surprise, so well were they done. Though they were tied out to wire shapes, something like one sees Zonal Pelargoniums and Pompon Chrysanthemums sometimes done, yet they were superbly grown and flowered, and formed one of the features of the Exhibition. One of these, named *Beauty*, shown in the winning collection by Mr. Joseph Thorpe, received a first-class certificate; the centre of the flower was of a purple hue, and was broadly margined with pale lilac, heavily veined with dark lines.

Mr. W. Chater, Saffron Walden, had the following new Hollyhocks :—*Exulteum*, dark glossy maroon, flowers full and of fine shape, and a telling exhibition kind ; and *Carus Chater*, pale pink, suffused with rich carmine, a fine shade of colour, the flowers also large and full. The winning stand of cut herbaceous *Phloxes* contained Mr. William Paul's fine new kinds, *Beautiful* and *Conqueror*. The specimen of the latter was wondrously fine, the flowers white, with a rosy purple ring round the eye, the pips large, stout, and of the finest shape. It should be in every collection.

At the Meeting of the Floral Committee on August 4th, the Rev. Edward Hawke, who occupies in relation to the *Hollyhock* a similar position to that which Mr. Perry does to the Verbena, received first-class certificates for the following varieties :—*Ida*, a buff ground flower, suffused with fleshy carmine ; and *Willingham Model*, pale primrose, the flowers medium-sized, but very full, and of fine shape. Mr. R. Parker, Tooting, received a first-class certificate for *Primula sinensis filicifolia alba flore-pleno*, a good double white variety of the Fern-leaved section, the flowers having a dash of flesh-colour in them.

Messrs. Downie Laird & Laing's new *Pentstemon Mrs. Arthur Sterry*, deep rosy pink, with white throat, and pale segments edged with pink, is unquestionably a good variety, but was shown out of condition.

A pleasant feature of the meeting of the Floral Committee on the 18th of August consisted of the collections of *Gladioli.* They were remarkably fine, the season considered, and withal well coloured. Nearly all the leading growers now-a-days, both amateurs and professionals, are raisers of seedlings, and as there were prizes offered for collections of Gladioli, it was only natural that some seedlings should be produced among them. Messrs. Kelway & Son, of Langport, who not only grow but exhibit their spikes in an exceedingly creditable manner, received first-class certificates for the following four fine kinds:—*Julia*, pink, suffused towards the edges with carmine in the form of a feather, and flaked in the same way with rosy crimson, the throat pencilled with rosy purple; *Formosa*, something in the way of Julia, but of a paler ground colour, the edges of the segments feathered with violet carmine, the throat pencilled with purple; and *Lord Napier*, vivid orange scarlet, marked with white on the lower segments, a showy and beautiful variety. These three were seedlings, raised by the exhibitors. The same award was made to *Ulysse*, a fine continental variety, also shown by Messrs. Kelway & Son, a pale violet pink flower, feathered and edged with bright rosy carmine, a striking and beautiful variety.

There was an interesting *Hollyhock* competition between Messrs. Downie Laird & Laing, and W. Chater, with twelve spikes, but the former, helped by climate, gained the day. They showed one fine seedling, named *Sovereign*, to which a first-class certificate was awarded. It is of a bright claret crimson, full and finely shaped, forming a good spike as well as a fine addition to the flowers of this colour. Mr. Chater also had the following fine seedlings:—*Lord Napier*, rich bright crimson, extra fine; *Fascination*, lilac, dashed with pink, a pleasing and taking flower; and *Scarlet Gem*, bright crimson scarlet, a flower of fine quality, and very showy.

A fine addition to the class of *Nosegay Pelargoniums* has been made in Mr. G. Smith's *Masterpiece*, a somewhat novel-coloured flower, inasmuch as the pips were salmon crimson round the centre, the edges of the young blooms orange crimson, the trusses large and globular, the habit extra fine, and the foliage faintly zonate.

At the Meeting of the Floral Committee on the 1st of September, there was quite a display of new *Dahlias* and *Verbenas.* The hot weather had, no doubt, affected the quality of some of the former, nevertheless, some very good blooms were present. First-class certificates were awarded thus:—To Mr. Eckford, of Coleshill, for *Memorial*, a pale rose-coloured flower with finely-shaped petals, good outline, and high centre; to *Unique*, from Mr. C. Turner, a tipped rosy purple flower, somewhat small in size, but of good shape and substance; to *James Hunter*, from Mr. J. Keynes, yellow ground, laced with orange lake, a fine flower, having the appearance of being very constant; to *Indian Chief* (G. Rawlings), shown both by Messrs. Keynes and Rawlings, a good full circular flower, of a shaded claret maroon colour, and a fine addition to the dark varieties; and to *Mrs. Brunton*, from Mr. G. Rawlings, pure white ground, with a heavy lacing of deep purple, a medium-sized flower, of fine form and substance.

Second-class certificates were awarded to the following flowers:—*Polly Perkins*, from Mr. C. Turner, buff, faintly tipped with pale violet and white, and bright violet centre, a flower in the style of Pauline, but of a distinct shade of colour, small in size, but good outline, and full of promise; to *Lady Dunmore*, also from Mr. Turner, a flower that, where the self colour most predominates, greatly resembles Fanny Hurt, as it has a bright reddish crimson ground, tipped with white; actually it is an orange-buff ground flower, tipped with white, no doubt sportive in character, and having good centre and outline; to *Julia Wyatt*, from Mr. Keynes, creamy white, the centre suffused with yellow, a promising flower, that will, perhaps, be seen better; and to *Annie Neville*, also from Mr. Keynes, a pure white flower, somewhat flat, but having a high close centre.

Messrs. C. J. Perry, of Birmingham, and Eckford, of Coleshill, were in force with new Verbenas, and first-class certificates were awarded to the following:—*Florence Fiddian* (Perry), lilac, with crimson centre, finely formed pip, and large truss; to *Emma Perry* (Perry), blush white, with deep rose centre, pip large and finely formed; to *Argus* (Perry), deep rose pink, with lemon eye, with a ring of rosy crimson encircling it, pip of fine form, and large truss; to *Ace of Trumps* (Eckford), salmon rose, with crimson ring round a primrose eye, pip extra fine; to *Mrs. Eckford* (Eckford), white, with rose centre, a very pleasing flower, pip and truss both extra fine; to *Lady Folkestone* (Eckford), rose, suffused with violet, pip of fine quality; to *Master Jacob* (Eckford), crimson maroon, with pure white eye, a showy and striking flower; and to *Conspicuous* (Eckford), crimson, with white eye, surrounded by a dark ring, fine colour, pip, and truss. R. D.

TAGETES SIGNATA PUMILA.

WHAT a grand substitute this gorgeous annual proves to be for the Calceolaria, especially in such a season as the one we have just passed through. Drought appears to benefit it. Here it has been a complete sheet of bloom for weeks, and will continue in this condition until frost puts an end to its beauty. I consider it one of the most useful annuals of the day. Several other kinds of annuals, which in ordinary seasons are acquisitions, have this season, at this place, succumbed to the drought, while the Tagetes has remained most glorious. I only hope some of our enterprising florists will soon introduce a double kind, which would, indeed, be a grand acquisition.

Wrotham Park. JOHN EDLINGTON.

MONTHLY CHRONICLE.

MOST cultivators are now aware that the silvery-leaved plant with yellow flowers, so long grown under the name of Centaurea candidissima, is properly *Centaurea ragusina:* but it is not so generally known that the true *C. candidissima* is itself the subject of a misnomer, being widely sold under the name of C. argentea plumosa. At least I can affirm that the plant sent me by a London firm a year or two since, so labelled, was the true C. candidissima, with deeply bipinnatifid foliage, and pale purple flower heads. The *C. argentea* has, I believe, yellow flowers like those of *C. ragusina*, but the involucral scales are spineless, and the foliage is described as pinnate.—W. T.

—— How fine certain Pears are here (North Middlesex), writes J. E. In some instances the trees have suffered from the excessive drought, and where such is the case the fruit is naturally small, at least below the average size. Beurré Rance is remarkably good, without any signs of cracking. Duchesse d'Angoulême is very large; as also are Marie Louise, Beurré Diel, Napoléon, Glou Morçeau, and several other kinds. Our crops are very heavy, in fact, I never saw finer. The Pear evidently is at home in a dry season. Apples, although abundant, are below average as regards size.

—— The Alexandra or Alexandra Noblesse Peach proves this season to be excellent; indeed there is no doubt that it is in respect of the fruit, one of the finest Peaches in cultivation; and as regards the tree, one of the hardiest. Unlike the Noblesse, to which the fruit bears a close similarity, the tree is not subject to mildew, and the leaves are furnished with round glands, whereas in the Noblesse they are glandless.

—— A double-flowered Heath, in the shape of a sport from *Erica hyemalis* has appeared upon a plant growing in Haynes' Nursery, at Penge. The doubling consists in the repeating of the corolla over and over again, to the exclusion of the stamens and pistil. In the centre is a small shoot bearing scale-like leaves. The clear white of the inner petals contrasts nicely with the pink tinge of the outer whorl; and, altogether it is well worth the attention of horticulturists.

—— The Messrs. Lane's large Vinery, some 120 feet long, 24 feet wide, and 8 or 9 feet high at the ridge, has this season been well worth inspection. The house is span-roofed, and was clothed from base to apex with a remarkable crop of Grapes the aggregate crop being estimated at a ton weight. These Vines when pruned in winter, are cut quite close, and the rod is trained up one slope and down the other, notwithstanding which difference of position the crop has been disposed with the most perfect regularity over the whole area of the roof.

—— The experience of previous years points to the undesirableness of digging the Potato crop in early autumn, merely on account of the sprouting of the tubers. In the season of 1818, with which the present has been compared for its heat and drought, the growth of the Potato was arrested, as it has been this year, and the same sprouting habit was observed. On that occasion the undisturbed Potatos yielded in autumn an enormous crop of excellent quality.

—— The Chinese Yang-mae, *Myrica Nagi*, which was introduced by Mr. Fortune some years since as an edible fruit, but of which little has since been heard, has lately yielded one or two fruits in an airy greenhouse at Heath House, Cheddleton, the residence of the Rev. A. F. Boucher. This year the same specimen has fruited again; and ripe fruit has also been gathered by Mr. Bateman in the gardens at Knypersley Hall. The fruit is roundish, of a fine red colour, and warted over the surface, much like an Arbutus berry.

—— Those who are intending to cultivate Tulips, Hyacinths, &c., out of doors, should lose no time in the preparation of their beds, and in the selection of their bulbs. Crocuses should also be planted at once where they are intended to make a display.—J. W.

—— A remarkably fine Peach named Exquisite, yields specimens which measure about 9 inches in circumference, and are of a rich and delicious flavour. Its large size, fine apricot colour, and high flavour render it an acquisition which ought to be in every garden. It came to England from the Rev. Mr. Bréhaut.

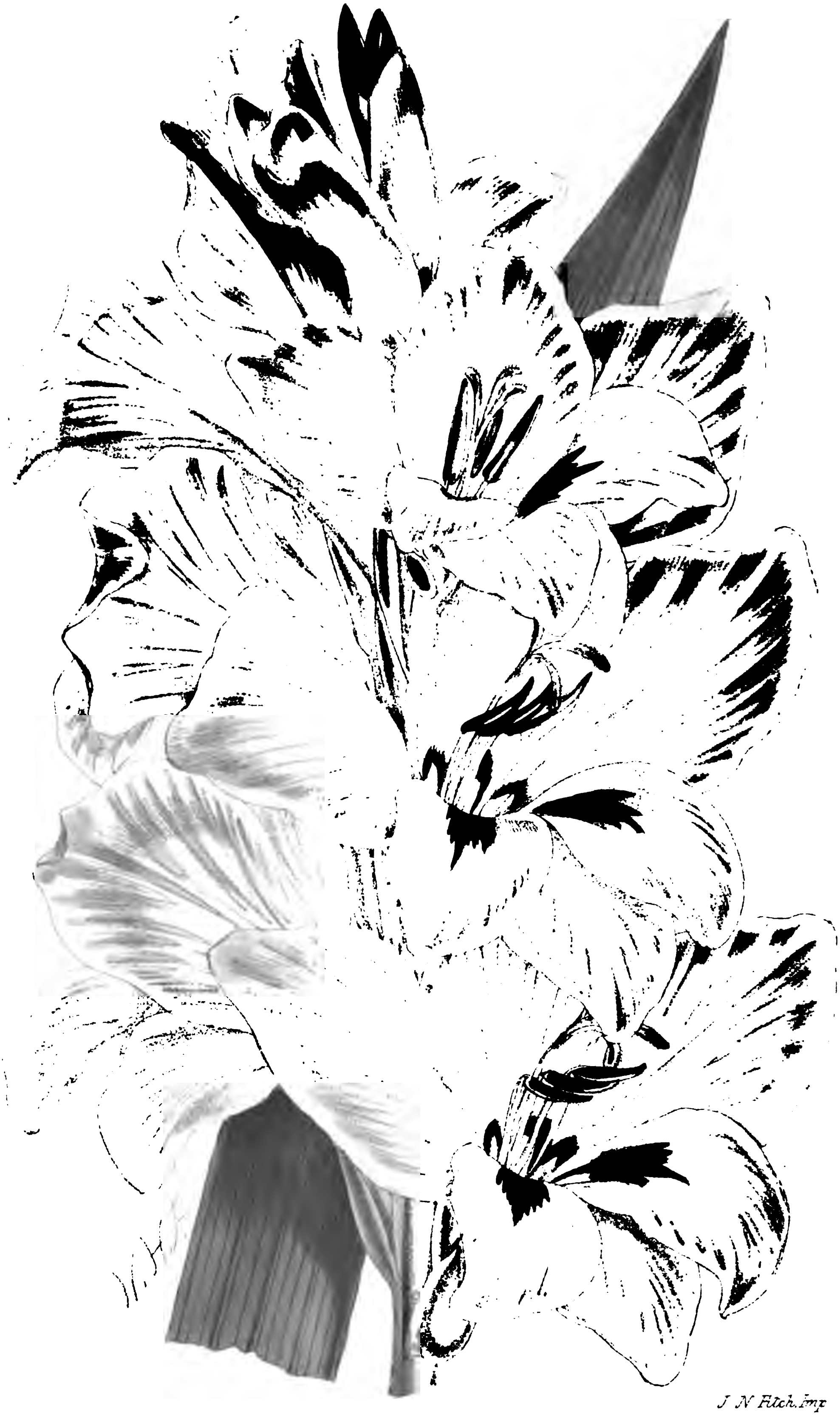
—— A few hints on the best method of Growing and Exhibiting the French Marigold would, we learn, be acceptable to several readers interested in their improvement. One friend suggests cuttings being struck of the best kinds, and kept through the winter season in a greenhouse, which would be worth doing in the case of plants yielding particularly fine or well-marked flowers.

—— It is stated by Messrs. Backhouse & Son that the plant distributed four or five years ago all over the country, and now almost universally grown as Lithospermum fruticosum, is not that species, but *Lithospermum prostratum*. The true L. fruticosum is a twiggy bush, apparently much less showy (at least in its wild state), and has yet to be introduced. Other fine species of this genus remain to enrich our gardens, such as L. hirtum, and L. canescens, both orange-yellow; and L. oleæfolium, and L. Gastoni, blue or violet.

Obituary.

—— Madame Eliza Vilmorin, widow of the late M, Louis Vilmorin, mother of M. Henri Vilmorin, and latterly the head of the extensive and widely-known house of Vilmorin-Andrieux et Cie., of Paris, perhaps the most extensive in Europe, died at Verrières, on the 3rd of August last. Madame Vilmorin identified herself with the scientific pursuits of her late husband; and had latterly made the Strawberry her more particular subject of study, numerous articles from her pen being supplied to illustrate the plates of M. Decaisne's splendid work *Le Jardin Fruitier du Muséum.*

—— Mr. David Bowman, a young and enterprising botanical collector, in the service of the Royal Horticultural Society, died at Bogota, New Grenada, on the 25th of June last, of dysentery. His name adds another to the long roll of botanists who have laid down their lives in acquiring for our gardens the vegetable treasures of other climes. Mr. Bowman was born in 1838, at Arniston, near Edinburgh, where his father was gardener; and after serving his apprenticeship at Arniston, was engaged at Dalhousie Castle, Archerfield, Dunmore Park, and Chiswick, at which latter he was employed as plant foreman to within a short time of his leaving England three years since. Cyanophyllum Bowmanni, one of his introductions, will commemorate his labours.


J. N. Fitch. Imp.

Gladiolus. Lady Alice Hill.

GLADIOLUS LADY ALICE HILL.

WITH AN ILLUSTRATION.

AMONGST the most marked of the recent improvements which have been made in the Gladiolus, has been the introduction of numerous finely-striped varieties, a group of which the annexed figure serves as a good illustration. The variety there represented was raised by Mr. Standish, of Ascot, and was awarded a first-class certificate by the Floral Committee in October, 1867. It forms a fine bold spike, and the individual blossoms are not only stout, well-formed, and symmetrical, but well-placed on the spike. The colour is a pale rosy tint, boldly flaked with purplish rose, the throat being flamed with deep rosy violet. Mr. Standish has been a most successful raiser of Gladioli, and the present variety, of an entirely novel character, will add to his well-earned reputation.

M.

COOL ORCHIDS.

THE past growing season has been peculiarly inimical to Alpine Orchids. The heat, so oppressive in July and August, aggravated by the most intense and penetrating influence of Sol himself, had a great tendency to pump up the sap from the pseudobulbs and leaves of certain Orchids such as Odontoglots, and disperse it in the artificial atmosphere. Cool temperature and shade were agreeable, and only where it has been possible to obtain anything at all approaching these conditions, can success have been attainable. North houses, or shady nooks out of doors, were the best situations for conserving health and promoting growth. Could we count upon similar seasons in years to come, it certainly would be wise to adopt the Messrs. Backhouses' plan, and string up some, such as block plants, on clothes' ropes in a shady place, and place others requiring terrestrial treatment in such come-at-able places as are chosen for Camellias and Azaleas, after the buds have been formed—certainly they would luxuriate in such an atmosphere better than if roasted up under glass, with a thermometer ranging from 80° to 90°. Such a practice as the above I have no hesitation in saying would be wise. What a glorious wrinkle to know that certain of the coolest and most beautiful of the Orchids will thrive in summer better out than in-doors, provided we have a return of such a season as '68.

But a word of warning is necessary, and it may be proclaimed through the FLORIST, whose pages are generally well thumbed. It is this that, supposing the plants are grown out of doors in summer, they are not to have corresponding treatment in winter. Certainly not. The natural temperature of these Alpine regions, where the Orchids are found, does not materially vary over the season, and in just imitation of native habitats, I have to recommend that, as a rule, the minimum temperature of their winter home should not be much less than 40°. It may be occasionally so, without fear of consequences; but if generally so, evil may and will follow. Let no one in his anxiety to adopt cool treatment throughout, be induced to carry his hobby too far. More plants of the kind upon which I am writing, suffer through a *too warm summer treatment* than from a too warm winter treatment. A good medium heat must at all times be insisted upon and catered for, and the plants will show their appreciation of it by stout growths, vigorous flower stems, and well-developed flowers. Much may be done by a practised grower in keeping plants cool, if with it a judicious system of dryness be maintained; but, as a rule, the plants in winter will be better a little too warm than a little too cold, with, mayhap, an injudicious supply of moisture.

Meadow Bank. J. ANDERSON.

THE HOT DRY SEASON OF 1868.

THE warm and dry summer of 1868 will be long remembered for the intense heat and drought which prevailed in the months of May, June, and July, and its effects on vegetable and fruit crops. The soil in the kitchen garden here (North Notts), is very stiff and adhesive, but well drained, and the subsoil is the strongest of red clays. The following is the fall of rain registered by the rain-gauge up to the end of July—nearly one-half less than the average fall for these months—namely,

	Inch.	Parts.		Inch.	Parts.
January	1	54	May	1	20
February	1	92	June	0	23
March	1	11	July	0	19
April	1	31		7	50

The small hardy bush fruits, such as Gooseberries, Currants, and Raspberries, suffered a little from frosts on the 9th and 12th of April; but on the whole they produced good average crops. Strawberries are quite at home on the strong soil here, the British Queen never failing in producing good crops. The only variety which did not stand the dry warm weather, even with watering, was the Black Prince. Commencing with the Old Scarlet, or Grove End (and Rivers' Eliza, one of the best of all Strawberries for general gathering and preserving), I found the following succession of sorts stand the hot weather well:—Sir Joseph Paxton, President, Sir Charles Napier, Wonderful, Dr. Hogg, Lucas, and Rev. Mr. Radclyffe. These I consider the best of all the kinds I have grown this year. Dr. Hogg with me grew to an immense size, and, like the British Queen, seems to thrive in strong soils; it is sweeter than the British Queen in flavour, and altogether is a worthy rival to that noble variety. The following later varieties likewise fruited well :—Rifleman, Ingram's Late Pine, Cockscomb, Bicton White Pine, and Elton.

Apples and Pears, trained as bushes, pyramids, or "en quenouille," have made stronger and healthier shoots and flower buds than I ever remember before, owing, no doubt, to the Italian climate they had in June and July. Some early Pears on Quince stocks, grown as pyramids, were delicious this year, the kinds being Doyenné d'Eté and Citron des Carmes. They were as juicy and high-flavoured as Jargonelles, with a slight smack of astringency. Doyenné d'Eté ripened two weeks earlier on walls, was worthless in flavour compared to those ripened on pyramids. The finest and best-flavoured Pears grown here this year have been gathered from a trellised arcade, the sorts being Louise Bonne, Flemish Beauty, Marie Louise, Chaumontel, Beurré Superfin, Doyenné Blanc, Ambrosia, and Fondante d'Automne. Some of these kinds, such as Beurré Superfin and Marie Louise, ripened on south walls, are worthless this year as regards flavour and keeping. The hot sun, day after day, seems to have heated the walls so much, that the fruits were forced on prematurely, and never attained their proper flavour or solidity. Some table varieties of early Apples, growing on a west wall here, show the fruit quite marked and shrunk up on the sunny side. On our strong soil and clayey subsoil the Apples, as pyramids and bushes, have produced larger and finer fruit this year than I have seen before; the following kinds particularly produced large fruit :—Warner's King, Gloria Mundi, Mère de Ménage, Lord Suffield, Alfriston, and New Hawthornden. The very largest specimens of Apples have, however, been grown on cordons, only planted in March last, the kinds being Reinette du Canada, and Belle Dubois.

Welbeck. WILLIAM TILLERY.

GRAPE CULTURE.

GRAPES are certainly most luscious fruits, sweet, refreshing, and pleasant to the palate, beautiful to the eye, and to crown the whole, easily produced. "A bold assertion that," some pragmatical readers may say; "show us your proofs, and if we are convinced, we will admit what you assert," "*C'est le premier pas qui coûte*" says a French proverb, and now I have made the first step I will proceed.

To grow fine Grapes it is essentially necessary that the elements most conducive to the vigorous development of the plant should surround it. These are—well-drained soil, free ventilation, judicious and careful thinning of both wood, bunches, and berries, coupled with persevering attention that the crop, when produced, does not suffer from want or excess of moisture and heat during its progress to maturity. "These are all very fine as preliminary arguments," says a friend, who has accidentally grown 'a big bunch,' but does not exactly know how the accident happened, and so falls back upon his exalted self for praise and congratulation, "but I wish to have more particulars, as general ideas do not convey the necessary instructions how to proceed. I should wish to be informed what good well-drained soil means, and how the remaining contingencies to success are to be brought to bear on the progressive crop."

A good border is an essential attribute to the growth of fine fruit. It should be so arranged that water cannot by any accident remain and become stagnant about the roots, causing the putrefaction of those parts, shanking in the bunches, and the consequent want of colouring or flavour in the berries. To effect this, it is necessary that a drain should be cut 8 or 10 feet from the front of the vinery, 5 feet deep, and that the bottom of the border should be so formed and concreted as to convey the superfluous moisture to that drain, which should carry it to a cesspool or larger drain. The border should be composed of one-third fresh horse manure, and the remainder good fresh loam from a pasture, the first layer being placed with the turf downwards on the concrete. The remaining portions of the compost should be well trenched and mixed together, raising the border to 1½ foot above the intended level, so as to allow for settling.

Planting a new Vine border presents no difficulties to a practised hand. It is only necessary to procure the number of plants of the sorts required, and to take out trenches in the border 6 or 8 inches deep, and after introducing the rods through the apertures, to lay out the roots in the trenches in such a manner that they may take advantage of the soil prepared for them. It is the best plan to have those apertures as near the ground as possible, if the Vines are introduced from the front; but if the vinery is so constructed that the ground level at the back is on the same level as the top of the back wall, provision must be made for introducing them through or near the apertures intended for ventilation, and the rods may be trained down the rafters instead of in the usual way. The system of training Vine rods down the rafters instead of up, proves very successful when but one or two rods are required from each Vine. Some of the most productive vineries within a short distance of where I write are trained in this way; and as no parts of the plants are exposed either to the external atmosphere, or to the direct influence of the hot-water pipes within, they succeed admirably, and produce much shorter-jointed wood than when allowed to follow a more natural course.

Vineries should be so constructed that the whole of the front row of lights as well as those at the back should open. Suspending those lights on hinges, and providing leverage to open them, is a good plan, as it facilitates the operation. Additional means of ventilation should also be secured by small trap doors, both in front and at the back; the front ones below the level of the sill, and opening on the level of the piping, and the back ones just below the level of the wall plates which support the rafters of the roof, so as to be able to create a very free circulation of air in hot weather, and also to prevent the influx and increase of red spider, thrips, and the other insect pests which injure the foliage and sap the moisture intended for the supply of the crop in its progress towards development. Syringing should be copiously carried on during the early stages of the Vine's growth, judiciously withheld during the period of blooming, recommenced immediately after the fruit is set, and continued until the fruit commences colouring, when a more abundant supply of air is necessary.

Jersey. C. B. S.

TULIPS.

THOSE who hold ground in a favourable situation should now be filling in the mould, and making the beds ready for their Tulip bulbs, which, if not already arranged in their boxes, should be seen to, at once. The sooner they are got into the ground the better, as the bulbs will now begin to push, and if planted out will go on freely and gain strength, while if they are kept out for any length of time they will get weaker—for whether they are in the ground or out they will grow. If in the ground, the bud will have the fibrous roots to help it on, but so long as the bulbs are kept out of the ground, the bud has to feed upon the bulb itself, the first roots get stunted and weakened, and if neglected too long never lay firm enough hold of the ground to support the stem, and throw up the bloom. Under such circumstances blight and disappointment will be the consequence, besides that there will only be weak sickly bulbs hereafter to take up.

There is another matter of importance for those who have the opportunity and will to look after it, and in which the small grower who may only have one or two beds, has an advantage over a large grower, more particularly so if his garden be near to his dwelling. The bulbs should be planted the last week in October, or the first week in November—not later, and after the bulbs are in, a portion of horse litter should be got—if fresh from the stable it will be none the worse—and put through a three-quarter-inch sieve, and if the grower's hands be not too delicate, he should strew the same all over the bed, about an inch thick. When rain comes let the bed have the benefit of it, till it has just fastened the dung sufficiently to keep the wind from blowing it off; this being done I would recommend that all further rains be kept off till February, and both before and after that time, my advice is to protect from frost up to blooming period. We do not expect much frost after that.

I may here remark that some persons say frosts do not injure Tulips, but these must be altogether ignorant of what frost will do either to Tulips, or to other bulbous roots, or otherwise they can have never given themselves the trouble to try the difference. I could say much on this subject, but for the present will only recommend those who have the opportunity, and have not previously tried what protecting from frost will do, just to try covering fairly for one season, and I am sure that one trial will be sufficient to convince the most obstinate. We often hear of irregularly marked patchy flowers, and we often enough see them on the exhibition table at shows—flowers which are neither feathered nor flamed properly; many of those which ought to be regularly feathered all round the petals, are too often seen with no feather at all on some part of the edge, but, perhaps half-way down the inside of some of the petals a blotch of colour is visible. Now what is the cause of that blotch of colour being within instead of its being on the edge of the petal? There must have been some cause for its not working its way up to the edge. The bud probably enough has had a stroke while in the ground, before it came to daylight—oftener before than after; but Mr. Frost will have sufficient influence to speck the bloom, whether before or after the bud shows above ground. This I fully proved to my own satistion, over twenty years ago.

I have some other equally important points to discuss in reference to the Tulip, such as the taking and sowing of seed for producing correctly the different classes, both of white and yellow grounds. I am glad to observe that some of the oldest growers are falling into my way of thinking as regards the providing of two classes for yellow grounds, in like manner as we have two for white grounds, but this subject all being well, I shall deal with on a future occasion.

Huddersfield. JOHN HEPWORTH.

SEASONABLE GARDENING HINTS—NOVEMBER.

THE heavy rains of last month have moistened the land to a considerable depth; drains that have for months been dry have been running for some time, and ponds are everywhere getting filled. Great attention and considerable skill are required to manage properly plants under glass during the autumn and winter season, and particularly for some weeks after they have been brought into the houses from the open air, for, if not properly managed, they commence a new growth to their great injury. Great attention should be paid to giving air in abundance whenever the weather is mild; water should be given individually to the plants from a small-spouted pot, not with a rose, and this should be done in the morning so that all damp may get dried up before night. In very dull wet weather gentle fires may be used in the day time when the ventilators are open, for the purpose of drying up damp, a dry cool atmosphere being for the present essential to the well-doing of the plants.

Plants of all kinds in pits and frames must on no account be left exposed in rainy weather at this season, but every opportunity should be taken of dry, mild weather to give a plentiful supply of air. In very mild dry weather the lights may be removed for a few hours in the day, so that the interior of the pits and frames may become dry and healthy. I have kept Cinerarias, which are very susceptible of injury from damp and frost, in a cold frame in the most perfect health, without the loss of a leaf, by watering them only when absolutely necessary, and doing it with great care so as not to spill a drop on the stage or floor, by giving all the air possible at every favourable opportunity, and by covering well up at night, and in frosty weather during the day also.

All hardwooded greenhouse plants should, ere this, be well housed and properly arranged—a dry, cool, healthy atmosphere must be maintained by giving as much air as possible in mild weather, and using gentle fire in very wet weather to dry up the damp. Water at this season should only be given when absolutely necessary, but the plants should not be allowed to suffer for want of it. Softwooded plants should have particular attention paid to them now, particularly show Pelargoniums; the plants intended for early flowering next season should at once have their final shift if not already done, using a good rich compost; they should then be properly tied out, removing all superfluous shoots, and small leaves from the centres of the plants so as to admit air freely. They should be kept near the glass and clear of green fly; air should be admitted freely in mild weather and the night temperature should not get below 45°. Chrysanthemums will now be in great beauty and must be kept well watered. Cinerarias and Primulas raised from seed sown last April, and attended to as then recommended, will now be fine flowering plants, and will be very useful for decoration during the winter months; they will require regular attention in watering. Stove plants should be kept as dormant as possible until after Christmas; they should have no more fire heat than is absolutely necessary to keep the plants healthy. Advantage should be taken of wet days to look the plants over carefully, and to clear them of insects.

The beds and borders in the flower garden should at once be cleared of the summer bedding plants. Such beds as require it should have a good coating of manure, and all should be dug over deeply; the arrangement for the winter and spring being settled, the beds should be all planted as soon as possible. Bulbs of all kinds should be planted when the soil is in a dry state; spring-flowering perennials are so numerous and so beautiful, that they can hardly be too largely planted. To have good plants, it is necessary to have a piece of ground either in the kitchen garden, or other convenient place, for their culture during the summer months; by this means a large stock of fine flowering plants can always be had in readiness for planting in the flower garden as soon as the summer plants are removed. Primroses, Polyanthuses, Alpine Auriculas, Hepaticas, Pansies, Phloxes, Aubrietias, are only a few of the many beautiful plants adapted for this purpose. Dahlia roots should be taken up, dried, and put away. This is a good time to plant Roses, also stocks for budding next year. No person who can plant evergreen trees and shrubs in the autumn, should defer it until spring.

The work for the present month in the kitchen garden is not of an important nature. Still if the weather be favourable, a number of things, of small consequence in themselves, can be done now, which will eventually save much valuable time and labour. All vacant ground should be trenched and thrown up into rough ridges. Advantage should be taken of fine dry weather to take up and store away Carrots, Parsnips, and Beet. Celery should be finally earthed up, and protecting materials should be got ready to hand, to be used in case of severe frosts. Walcheren Cauliflowers should now be carefully watched, and as they head, the outer leaves should be bent over them to protect them from frost—naturally, the true Walcheren is to a certain extent self-protecting, but it is prudent to look them over daily at this season, and make certain of a good supply. Endive and Lettuce should be stored in pits and frames when these can be spared for that purpose. Fruit trees of all kinds should be planted in properly prepared borders, and not deferred until spring.

Stourton. M. SAUL.

TREE TURNSOLES.

THAT fine old favourite the Heliotrope or Turnsole (*Heliotropium peruvianum*), belongs to the order Boraginaceæ, and therefore becomes associated in our minds with various pet plants of that genuine blue-stocking family—*e.g.*, the common Borage (*Borago*), which is to all intents and purposes vastly like the "azure hose," for its flowers are of that bright celestial hue which has been the admiration of the wise and great in all ages, ("One the blue depths of seraph's eyes" was the way Byron characterised the blue band in the star of the Legion of Honour); while the leaves of the Borage are thickly covered with long rigid hairs not unlike homespun hose; and the pretty "Forget-me-not" (*Myosotis*) has the family curl like a volute, and all the blue type of the order concentrated in its tiny little self.

More than a hundred years ago, however, an addition was made to this happy family of pet plants, by the introduction from Peru, of the

Cherry-pie plant, the sweet-scented Heliotrope, so well known everywhere, that I need only state for the sake of argument, that it is described in botanical works as an evergreen trailing shrub, growing to the height of 2 feet, and requiring greenhouse treatment.

The character of many low-growing and trailing plants is so completely changed by being mounted on a stem, that in ornamental gardening they serve quite a different purpose to what they did or could have done before. Passing over such examples as Rose *trees*, we have tree Mignonette, and even tree Violets, and why not tree Turnsoles ? When I travelled from garden to garden in my younger days, I always noted the plants that I saw thriving well, whether native or exotic, with a view to turn the information to account if ever I should have charge of a garden. About 80 years ago I found the Heliotrope growing with a stem 10 or 12 feet high. Here was a discovery—a trailing shrub on its own roots, dangling from a pillar in a conservatory, a veritable Tree Turnsole with an extravagantly long leg. The Heliotrope grown as a tree is an adventure quite within the reach of any one who in these days of cheap glass has the luxury of a greenhouse, for the leg may be of any length to suit the means of the grower. For table decoration no plant is sweeter than the Heliotrope, which is peculiarly suited to that trim tufted style of growth like a button Mushroom, its stiffness being quite a recommendation to it; for the Heliotrope is handsome when stunted, but not so when straggling. If wanted to run, and to be tied to wires, as a climber we have only to encourage one leader, and bide our time, for the issue although slow will be not the less sure, and will give satisfaction in the end. The leaf of the Heliotrope in finely raised to produce effect by artificial light on the table, but its chief charm is the Cherry-pie odour of its open flowers.

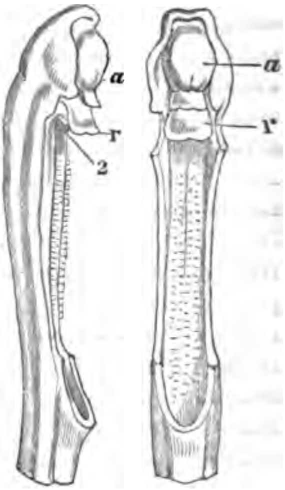
"And when the pie was opened,
Its odour it would fling;
And was not this a dainty bush
To set before a king ?"

When certain members of the Royal Family visited Alton Towers, I recollect being asked the name of the lilac-flowered climber, and when I stated what it was, they seemed surprised to see the tiny trailing Heliotrope thus set upon its legs.

ALEX. FORSYTH.

ON FRUITING THE VANILLA.

VANILLA is not only a plant of considerable interest, but also of some economical importance. It grows freely in our hothouses, but like many other Orchids, is shy in setting its fruits, even when flowers are produced. To obtain the fruit artificial fertilisation is necessary; and Mr. Bennett, of Osberton, a very successful grower of the plant, explained some time since in the *Gardeners' Chronicle*, how this was to be done, in terms which we here quote in a condensed form. I attribute failure in the blooming, says Mr. Bennett, "to not getting the wood well matured, for if it is not well hardened it will not flower freely. I allow my plant at times to get almost dry and parched." The failure in the production of fruit arises from a want of knowledge of the art of fertilising the stigma, an operation which requires both care and skill. In the flowers of the Vanilla, besides the sepals and petals, there is the column which bears the anther and stigma. The anther (*a*) is a dilated appendage attached to the summit of the column by a narrow curved neck, and contains the pollen-masses, within a cavity on its lower surface. This appendage, by means of its curved neck, bends downwards towards the lower surface of the column, where it rests upon an organ called the retinaculum (*r*), interposed between the anther and the stigmatic surface (2), which latter lies immediately under the retinaculum, and terminates the bearded glandular process which covers the lower surface of the column. The retinaculum, which is concave towards the stigma, effectually prevents all contact between that and the anther, and it is therefore necessary to remove it. This is best effected by means of a pair of narrow-pointed forceps, which should be carefully introduced sideways between the anther and stigma, so as to seize the retinaculum and tear it off in the direction of the anther. The pollen masses are then drawn out and pressed down on the stigmatic surface, and the operation is completed. If this is properly performed, the setting is certain. The fruit takes about twelve months to mature.



The Vanilla should be so trained that the flowers may be easily got at. They open for the most part during the night or early in the morning, therefore the best time to fertilise the flowers is in the morning; and this must be attended to day by day as long as the plant is in bloom. The plant is of easy culture, and grows very freely in a mixture of peat and charcoal. It may be trained in any form, and will attach itself to mortar, wood, or iron. Having little tendency to branch, the plants are the better for being frequently topped to make them throw out side shoots, and to secure a greater space for the production of the fruit, which thus grown attains high flavour. Mr. Bennett believes that it would be a good speculation to grow a house of Vanilla for commercial purposes.

NEW ROSES—THE FORTHCOMING BROOD.

THE following new Roses are announced for sale in November of the present year. There will, doubtless, be further announcements, but this is a complete list of such as have reached us up to the present moment. The descriptions are those of the raisers, who alone must be considered responsible for their accuracy.

Adolphe Brongniart: H.P.—Beautiful bright carmine red, large, full, of fine form, very sweet; growth very vigorous.

Adrienne Christophle: Tea-scented.—Yellow, copper, and apricot strongly shaded with rosy peach, sometimes deep yellow, large, very full; growth very vigorous.

Adrien de Montebello: H.P.—Beautiful fresh rose satin-like, large, full, and flat; growth moderate.

Alba floribunda: H.P.—Clear flesh-coloured white changing to pure white, of medium size, fine form, and full; growth very vigorous; a seedling from Louise Odier.

Alphonse Fontaine: H.P.—Carmine red shaded with bright cherry, large, full, and of fine form; growth vigorous.

André Fresnoy: H.P.—Beautiful bright red, sometimes shaded with purple, very large, full, and of fine form; growth vigorous, a seedling from Victor Verdier.

*André Leroy d'Angers: H.P.**—Beautiful deep violet, very large, full, and of fine form, superb; growth vigorous.

Berthe Baron: H.P.—Very delicate rose lightly shaded with white at the margin, large, full, of fine form; growth very vigorous; a seedling from Jules Margottin.

Charles Fontaine: H.P.—Dark red, shaded with purple, illumined with fire, large, full, flowers constantly; growth very vigorous.

Clovis: H.P.—Beautiful red strongly shaded with purple, large, full, of fine form; growth vigorous.

Commandant Mansuy: H.P.—Beautiful bright fiery red, large, full, and of fine form; growth vigorous.

Devienne Lamy: H.P.—Beautiful carmine red, large, full, very fine, globular form; growth very vigorous.

Dupuy Jamain: H.P.—Bright cerise, large, full, and of fine form, flowers freely; growth vigorous.

Emilie Hausburg: H.P.—Delicate satin-like rose, glossy, the petals edged with white, large, full, of the most perfect imbricated form; growth very vigorous.

Henry Ledechaux: H.P.—Beautiful bright carmine rose, large, full, and of fine form; growth vigorous; a seedling from Victor Verdier.

Jacques Cartier: (Damask Perpetual).—Beautiful clear rose with darker centre, reverse of the petals whitish, opening well, very large, full, and globular; growth vigorous.

Jeanne Renon: H.P.—Beautiful carmine rose, large, full, globular; growth vigorous.

Jeanne Sury: H.P.—Beautiful dark rose, large, full, of fine form, flowers constantly; growth vigorous; a seedling from Général Jacqueminot.

Julia Touvais: H.P.—Pure flesh-coloured rose, satin-like and very brilliant, the circumference of the petals bright rose, extremely large, of perfect form; growth very vigorous; a seedling from Madame Domage, unique in delicacy of form and colour.

Julie Treyve: H.P.—White, the back of the petals lilac rose, globular, of medium size, full; growth very vigorous.

La Tulipe: Tea-scented.—White tinted with rose, sometimes with lilac, large, full, and of fine form; growth vigorous.

Leopold II.: H.P.—Beautiful rose slightly tinged with salmon, very large, full, and of finely cupped form; growth vigorous.

Le Roitelet: (Bourbon).—Satin-like rose, form perfect, small, very full; growth very vigorous; a seedling from Louise Odier.

Madame Celina Noirey: Tea-scented.—Delicate shaded rose, the backs of the petals purplish red, very large, very full, fine habit; growth very vigorous.

Madame Clert: H.P.—Beautiful salmon rose, flowers large and full; growth very vigorous.

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* There is already a Rose under this name and answering to this description. As it was sent out in England a few years ago, it has probably reappeared as a novelty in France.

Madame Creyton: H.P.—Brilliant carmine shaded with rose, tipped with white, large, full, and of fine form; growth very vigorous.

Madame Decour: H.P.—Beautiful bright rose, very large, almost full, form globular; growth vigorous; a seedling from Souvenir de la Reine d'Angleterre.

Madame Farfouillon; *H.P.*—Beautiful satin-like rose shaded with salmon orange, very large, almost full; growth vigorous; a seedling from Mére de St. Louis.

Madame Hersilie Ortgies: H.P.—Salmon-white, silvery, medium or large, good form, and habit full; growth very vigorous.

Madame Jacquier: H.P.—Beautiful Bishop's purple, very large, very full, globular, good habit; growth vigorous.

Madame Lauriol de Barny: Hybrid Climber.—Beautiful rose, superb, very large, full, imbricated; growth climbing, very vigorous. This variety, which is only a summer Rose, is of remarkable beauty.

Madame Lierval: H.P.—Clear bright carmine rose, large, full, and of fine form, flowers very freely; growth vigorous.

Madame Puissant: H.P.—Beautiful bright cerise red, changing to clear rose, large, full; growth very vigorous.

Marcel Grammont: H.P.—Beautiful dark brownish red, large, full, and globular; growth very vigorous; a seedling from Comte de Montalivet.

Marquise de Mortemart: H.P.—Beautiful satin-like white relieved with delicate flesh-colour in the centre, the colours very clear, very large, very full; growth very vigorous; a seedling from Jules Margottin.

Marie Ducher: Tea-scented.—Transparent rose, very large, full, of fine form, good habit; growth very vigorous.

Marie Sisley: Tea-scented.—Yellowish white broadly margined with bright rose, large, very full, of globular form, good habit; growth vigorous.

Margarita: Noisette.—Brilliant yellow, broadly edged with pure white, shaded with rose, of medium size, very full, of fine form, and habit; growth very vigorous.

Marquise de Verdun: H.P.—Bright carmine rose, globular, very large, almost full; growth vigorous.

Maupertius: Perpetual Moss.—Beautiful dark velvety red changing to crimson, of medium size, full, flowers constantly: growth very vigorous.

Maurice Lepelletier: H.P.—Beautiful vermilion red, globular, of medium size, full; growth very vigorous.

Minerve : H.P.— Crimson shaded with fiery red, colours beautiful, large, full, of imbricated form; growth very vigorous.

Monplaisir: Tea-scented.—Very dark salmon yellow, very large, very full; growth very vigorous; a seedling from Glorie de Dijon.

Monsieur Journeaux: H.P.—Reddish scarlet, very fine form, large and full; growth very vigorous.

Monsieur Lierval: *H.P.*—Dark purple strongly illumined with fire, large, full, and of fine form; growth vigorous.

Nardy frères: H.P.—Beautiful violet rose, reverse of petals slate colour, large, full, and of fine form; growth vigorous; in growth like Madame Boll, flowers constantly.

Notaire Bonnefond: H.P.—Velvety purplish red, very large, full; growth very vigorous; A seedling from Général Jacqueminot.

Octavie Choquet: H.P.—Clear silvery rose, of medium size, full; growth vigorous.

Perfection de Lyon: H.P.—Rose colour, the reverse of the petals lilac, cupped, very large, and full; growth vigorous.

Reine Blanche: H.P.—White very slightly tinted with rose, large, full, of fine form; growth very vigorous; a seedling from La Reine.

Réné Daniel: *H.P.*—Beautiful cerise red, large, full, of fine form; growth very vigorous; a seedling from Jules Margottin.

Souvenir de Poiteau: H.P.—Beautiful bright salmon rose, colour new, large, full, of finely cupped form, the arrangement of the petals very regular; growth very vigorous.

Thyra Hammerich: *H.P.*—Very delicate and bright flesh-coloured rose, very large and full; growth vigorous: a seedling from Duchess of Sutherland.

Vicomte Maison: *H.P.*—Bright carmine cerise shaded with silver, large, full, of fine form; growth vigorous.

Victor Le Bihau: H.P.—Beautiful bright carmine rose, very large, very full; growth very vigorous.

Victor Trouillard père : H.P.—**Beautiful red changing to violet, very large, very full, of fine form; growth very vigorous.**

Paul's Nurseries, Waltham Cross, N. WILLIAM PAUL.

DIONÆA MUSCIPULA.

HAVING received several inquiries as to my method of growing the Dionæa, I have thought it best to answer them through the medium of the FLORIST.

This plant, although, possessing no attractions in the shape of brilliant flowers or stately growth, is nevertheless a most interesting subject when well grown. It has been long in cultivation, but, owing in a great measure, I believe, to unskilful treatment, it still remains scarce. Found indigenous in the swamps of Carolina, it cannot endure to become anything approaching dry at the root, neither will it long continue in health if kept closely confined under a bell-glass in a very high temperature—the conditions under which we generally find it; plants so treated make larger growth for a time, but ultimately become sickly and dwindle away. Neither must it be excited to growth during its season of rest in the winter.

Those who are commencing its culture ought to procure plants before the beginning of March. At this time they will show signs of commencing to grow, and should be potted, carefully removing all the old soil, no matter how sweet and porous it may appear, for if left in the same soil more than twelve months there is great danger of its becoming sour, if sufficient water has been used for the well-being of the plants.

The material I use consists of three parts chopped sphagnum, two parts fibrous peat broken to the size of horse beans, and one part crocks broken to the size of Peas, with a little sand. I pot tolerably firm, using thumb pots well drained; and plunge the pots up to the rims in sphagnum as close as they will stand in a shallow pot or pan, immediately giving a good soaking with water. If the plants are strong they will throw up flower stems as soon as they commence growing, but these should be removed as soon as they appear. During the growing season the plant should be watered overhead every day. In November or December it will show signs of going to rest by making several small leaves; those are all that will remain during the winter, as the larger ones that have been made during the summer will gradually decay, and ought then to be removed. During the winter, the plants will require water two or three times a-week, according to the amount of atmospheric moisture in the house; the soil ought to be kept drier during the winter months than during the growing season, otherwise the roots being dormant will rot; still it must never be allowed to get nearly so dry as the majority of other cultivated plants require to be, for if it does death is almost sure to follow.

I may perhaps appear somewhat profuse as to the matter of watering, but I have long come to the conclusion that the judicious application of water in the necessary quantities to this, as well as to all other plants that have their roots confined within the limits of a pot, is of far greater importance than any other operation in their culture. I never cover the plant at all with a bell-glass, except during the time it is from home at an exhibition. It enjoys a moderately light situation, but cannot bear the sun; in addition to a thin shade on the house, I cover the plant with thin tissue paper during sunshine. The temperature of the house wherein it is grown ranges in the spring months from 50° to 60° by night, with a rise of 10° by day; in summer from 65° to 70° by night with a rise of 10° by day. All the plants that have been strong enough to throw up blooms will form two crowns, which at the time of potting should be separated.

Under the above treatment the plant appears to have a perfect immunity from the injurious attacks of all insects; not so, however, as regards the insects themselves, for woe be to the luckless woodlouse, beetle, or slug that happens to get within its trap-like appendages. In a strong plant the leaves formed early in the summer will get from 4 to 6 inches long, and in such I have seen slugs 4 inches long entrapped, and held until quite dead.

The Gardens, Summerfield, Bowdon. T. BAINES.

EXHIBITING ALPINE AND HERBACEOUS PLANTS.

WE are pre-eminently great at exhibiting; our pot plants are far before those of other countries; specimens are to be seen at every show which are models not only as regards beauty, but as showing a remarkable development of plant from a very small space of confined earth, exposed to many vicissitudes; yet in one respect we have made no progress whatever, and that is, in the pot-culture of alpine and herbaceous plants, for exhibition purposes.

Prizes are frequently offered at our flower shows for these plants, and usually awarded, but the exposants rarely deserve a prize at all, for their plants are usually badly selected, badly grown, and such as never ought to appear on a stage at all. In almost every other class, the first thing the exhibitor does is to select appropriate kinds—distinct and beautiful, and then he makes some preparation beforehand for exhibiting them; but in the case of our hardy friends, anybody who happens to have a rough lot of hardy miscellaneous rubbish exhibits it, and thus it is that we have seen such beauties as the following exhibited during the past season—a common Thrift with the dead flower-stems hanging on it, and drooping gracefully over the green leaves; a plant of Arabis albida out of flower; the Pellitory-of-the-wall, which has as little beauty in flower as out of it: not to speak of a host of worthless things not in themselves ugly, but far inferior to others in the same families. What would become of our shows if the same tactics were carried out in other classes? Imagine an exhibitor busy at work the day before the show, putting flowering cuttings of Ixoras or Heaths into large pots. This is precisely what even our best growers do with plants like Iberises—so peculiarly adapted for growing into the neatest of specimens in a short time, and without any trouble.

There is no class which offers to the tasteful selecter more beautiful or more varied subjects than the one under discussion—none that will better reward the enthusiastic cultivator. It is quite a new field, and almost an inexhaustible one. The judicious exhibiting of the finer alpine and herbaceous plants would really show to the million what treasures are within their reach, and help to spread more quickly the growing taste for them; and there is no doubt that a more widely-spread knowledge of them would do more good than that of any other class of plants, because they may be grown by all, and enjoyed by all. Therefore, apart from any honour or pecuniary advantage to be had, those who would grow them and show them well, would be doing a real public good. Of course, I am not sanguine enough to think, that if hardy flowers were grown abundantly in a given district, everybody therein would suddenly become virtuous and amiable, or that the presence of a collection of spring flowers would immediately shed around an amelioration which eras of great effort have failed to produce; but let us doubt not that "through the ages one increasing purpose runs," or, that every simple pleasure and pursuit which attracts men from the baser modes of passing their time, is a gain to humanity. Simple yet inexhaustible, healthful yet most intellectual of pursuits, ours is "the purest of human pleasures"! And I think I may promise every beginner, that he will find the highest pleasure of this first of real and healthful recreations, is the culture of hardy plants in the open air. There is not a waste spot in the smallest, or largest of gardens that may not be beautified by them; the very chinks of the walls may glisten with the silvery Saxifrages and other lovely plants that prefer such positions—I have lately seen a beautiful miniature rockwork well covered with plants on the stony slab outside a window; their presence in good variety, in cottage and villa gardens everywhere, would impart a new charm to our spring and early summer, and could not fail to awaken such interest and curiosity, and lead to the spread of such plant-knowledge as would have the best effect on horticulture. However showy or beautiful any other family class of plants may be, it may be safely said that in no other class could be found so much varied beauty. In it we have "a little of everything." We may render our group interesting with hardy Orchids, such as *Cypripedium*; we may be bright as fire with the vivid *Anemone fulgens*; green and graceful here and there with plants grown wholly for their leaf beauty like *Thalictrum minus*, and the hardy Ferns; fascinatingly simple and elegant with things like the Snowflakes, and other bulbs and spring flowers; rich and imposing with well-grown Larkspurs, Lilies, and the like; silvery with pretty glistening plants from *Antennaria tomentosa* to *Salvia argentea*—many of this tone being graceful in leaf; or gay, neat, and "specimen-like," with tiny *Menziesias* and allied plants, much dwarfer, but not a whit less beautiful than the big Heaths of our shows. But it is vain to enumerate. We may cull from the choicest vegetation of every northern and temperate country, from the highest Alps to the rocks of the sea-shore, and gather the floral treasures of the valleys of Greece and Italy, of the slopes of the Rocky Mountains, or of the rich plains of northern Asia without exhausting the precious gems of hardy plants, with which this our world is bejewelled.

Let me glance for a moment at the capabilities of many hardy plants for showing—selecting a few of the most suitable kinds. The Anemones afford a few choice things for early exhibitions, as A. fulgens, sylvestris, and the varieties of coronaria, while the white Anemone Honorine Jobert, would form a fine specimen for the summer and autumn. Then there are the Hepaticas which surely are worthy of being grown well in pots for their own sakes; Ranunculus amplexicaulis (a very pretty pot plant), aconitifolius flore-pleno, acris flore-pleno, bullatus flore-pleno of Henderson; the double Caltha; the Trolliuses which might be readily grown into fine large pot specimens that would look very imposing at shows, and help to perfume them also; the choicest of the Aquilegias, which would form attractive specimen plants; and the Delphiniums staked out and well grown in good soil in large pots, ought to make a show of their unequalled and greatly varied blues and purples, which would take everybody by surprise. Passing on, there are the Epimediums (neat in habit); the Dielytras; the Arabises; the Aubrietias; the Alyssums (montanum and spinosum, in addition to saxatile); the Æthionemas; the Drabas (for pans), the Iberises (bushy low specimens coming down well over the pots); the Double Rockets (in good specimens); Helianthemums, Violets, Parnassias, Gypsophilas, and Dianthuses; Saponaria ocymoides; Silene alpestris, acaulis, Schafta, and Elizabethæ; the Lychnises alpina, flos-Jovis, and Viscaria flore-pleno (the finely-coloured variety); Arenarias (particularly montana); Cerastiums; Linums; Malva campanulata (a dwarf decumbent beauty, too rarely seen); Callirrhoës; Geranium striatum, lancastriense, argenteum, and cinereum; Erodium Manescavii and Richardi (the last in pans); Oxalis Bowieana, floribunda, and others; Genista sagittalis; Ononis arvensis alba; Anthyllis montana; Astragalus monspessulanus and others; Coronilla minima and varia; Orobus vernus (there are several distinct varieties); Spiræa japonica; Geum coccineum and montanum; Potentilla, in great variety; Acæna novæ-zelandiæ (for pans); Œnotheras (for tall or dwarf specimens); Zauschneria californica; Sedums in great variety—best shown in pans as a rule, as are also Sempervivums and Saxifragas. Of these three families alone, beautiful and attractive classes might be made. Then there are Eryngiums, particularly alpinum and amethystinum; Cornus canadensis and suecica; Linnæa borealis; Morina longifolia; Liatrises; Antennarias (several); Stenactis speciosa; Craspedia Richea; Asters, several of the very choicest kinds would make good pot plants, for example—versicolor, turbinellus, and elegans; double and variegated Daisies; Gaillardias and Rudbeckias (both of these would come in finely with such things as the tall white autumn-flowering Anemone, Statice latifolia, Sedum spectabile, and the like); Santolinas; Artemisias (some of the silvery kinds would prove very effective in pots); Achilleas (tomentosa, aurea, ægyptiaca, Ptarmica flore-pleno, and others); Pyrethrums of the carneum breed, in fine variety; Lobelias of the tall herbaceous type in variety; Symphyandra pendula; Campanulas, many fine kinds both dwarf and tall; Platycodon grandiflorum; Heaths, the dwarfer and better varieties; Gaultheria procumbens; the neat little Andromedas, Menziesias and Rhododendrons; the Pyrolas; Asclepias tuberosa; Gentianas in variety; Spigelia marilandica and Rhexia virginica (both charming plants in peat); Polemonium cœruleum variegatum; Lithospermum prostratum and fruticosum; Myosotis dissitiflora, alpestris, and sylvatica; Phloxes, both the bright little species that lie like moss on the ground, and the many noble varieties of the taller kinds that are now in our nurseries; Convolvulus mauritanicus and lineatus; Pulmonarias; Symphytum caucasicum and bohemicum; Omphalodes verna and Luciliæ; Ramondia pyrenaica; Antirrhinum rupestris and majus (the last in fine variety and like many other subjects herein enumerated very readily grown into neat specimens); Linaria alpina, and the Peloria form of vulgaris; Calceolaria Kellyana; Pentstemons in fine variety, both of distinct species and of the varieties of Hartwegii, &c.; Chelones; Masus Pumilio (for pans); Mimulus, Erinus, Wolfenia, Veronica (in great variety), and Thymus; Dracocephalums, particularly the rare grandiflorum; Salvia argentea and patens, with, perhaps, a few others; Zapania nodiflora; the Acanthuses (for their foliage or flowers); Cyclamens, Soldanellas, Dodecatheons, Primulas, Androsaces, Statices and Acantholimons (there are several beauties of this genus on the continent which will, doubtless, soon find their way to us), Armeria cephalotes; hardy Orchids; Irises; Sisyrinchium grandiflorum; Narcissi in variety; Leucojum, Funkia, Kniphofia, Polygonatum, Trillium, Lilium (not to speak of other hardy bulbs), and lastly, variegated Grasses, &c.

There! Those with slight knowledge of plants will have no difficulty in seeing what a treasure of pretty plants might be found for exhibition purposes amongst those enumerated, while many other suitable individuals and families may be found. Having thus indicated the direction in which to look for the kinds of plants that will best reward the cultivator for his trouble, and be able to hold their own in any assembly, I will hereafter say something of their cultivation.

Kensington. W. Robinson.

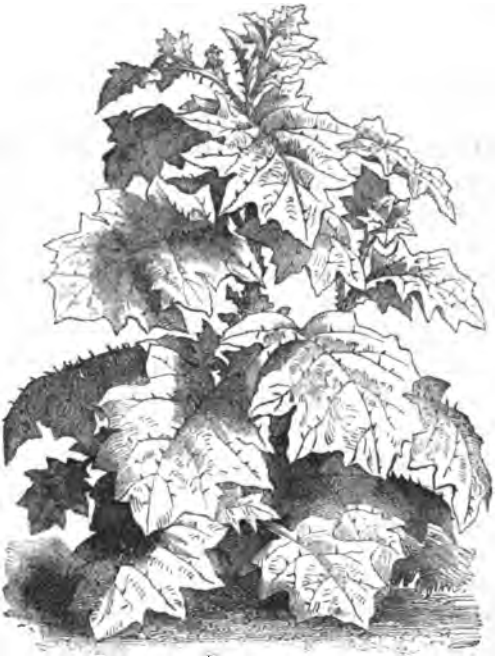
THE CULTURE OF HORSERADISH.

IN the course of the spring of the present year my attention was forcibly arrested by some able remarks on the culture of Horseradish in the *Journal of Horticulture* for 1867. The system advocated appeared to me to be so great an improvement on the old one, that I determined to give it a trial, in opposition to our routine method of planting every year a bed to come into use the third year after planting. In the place of digging out trenches, and filling them up as directed in the article alluded to, I selected a bed which last year was used for the cultivation of ridge Cucumbers, having been prepared in the usual way by throwing out a trench about 3 feet in width, and 2 feet in depth, which is filled well up with manure, short grass, tree leaves, or any other suitable rubbish which will generate a little heat. This of course was all rotted down, and early in April of the present year, I trenched up the middle of the bed, incorporating the soil and rotten stuff together, and thus prepared it for planting.

It appears to me that there are two principal points to be carefully followed out in order to insure success; one is to properly prepare the sets for planting, and the other is to secure a well-prepared bed of rich soil for them to grow in. With regard to the preparation of the sets, at the time of digging up the three-years bed, I directed the men to save all the long roots about the thickness of a goosequill; these I selected as straight as I could get them, and shortened them to a length of 1 foot. From these every perceptible eye was removed except those close to the top, and also all the fibres with the exception of those about an inch from the bottom. Having thus prepared a sufficient number of roots, I made holes 9 inches apart in a diagonal direction from the sides to the centre of the bed sufficiently deep to take the roots without bending, and into these they were inserted, and the earth pressed down upon them. I then by way of a catch crop planted a row of Cauliflowers down the middle, and one on each side of the bed; these did very well.

The bed was planted on the 15th of April and in the first week of this month (October), within six months of the time of planting I have roots equal in size, and superior in quality to any that I get from the beds of the third year under the old method. I feel sure that I need not enlarge upon the economy of this method of cultivation, the facts speak for themselves; and as I have myself proved it practically, I cordially recommend it through the medium of the FLORIST AND POMOLOGIST.

Redleaf. JOHN COX.



THE SOLANUMS AS FOLIAGE PLANTS.

FEW genera of ornamental-leaved plants furnish more useful or so wonderfully varied material for summer gardening than that of the *Solanums*. When in a young and free-growing state many of them have a very imposing appearance. Of these a good example is presented by the Solanum robustum, of which the above is a figure.

Of a genus so varied and so extensive, there will be found in large collections many species of comparatively little interest, but some few are indispensable for those who would attempt to carry out the fashionable and most interesting style of gardening, to which the name of subtropical is applied. Mr. Robinson, who writes from experience both of English and French gardens, recommends the following as being especially desirable:—

S. robustum
S. marginatum
S. crinipes
S. crinatum
S. hypoleucum
S. Warscewiczii
S. macranthum
S. macrophyllum
S. callicarpum
S. quitoense

Most of these plants grow freely from cuttings ; as a rule they require hothouse treatment in winter, and in summer to be planted out in light rich soil, in a warm position, with perfect shelter. S. robustum with its felt of rusty hairs, and the bold outline of its leaves, becomes under such circumstances a noble and effective plant. M.

ON PLANTING TREES.

TREE-PLANTING has a direct interest for all who take delight in horticultural pursuits generally; and in so far as it applies to the transplanting of fruit trees, for the readers of the Florist and Pomologist in particular. Hence a few remarks on the subject may not, at this season, be out of place.

There are a variety of opinions as to what is the best or the proper time of the year for performing this operation. Some boldly advocate spring-planting, whilst others go wholly for autumn and early winter work ; and with these latter I entirely agree. Perhaps there never was a season when the system of spring planting was put more thoroughly to the test, than during the past excessively hot and arid summer; and those who advocate late planting may justly demand a larger share of consideration from those who disagree with them, after such very exceptional weather. Still I ask, when so much is to be lost, where is the gain of planting so late ?

Many are bound through a variety of causes to plant late, and amongst these are nurserymen in general. But this is not their fault. They constantly advocate autumn planting ; but if cultivators will not send in their orders till the latest moment, who is to blame ? Certainly not the nurserymen, as they have to defer many an essential operation, until they can make their intended summer arrangements, with something like the assurance that no further large demands will be made upon their stock.

November has again arrived, and I advise that everything possible in the way of tree-planting should be set about earnestly. Let it be considered the planting month of the year ; and this because the loss of trees caused through the process of transplanting, is due mainly to excessive evaporation or loss of sap—that vital moisture which maintains and nourishes their every extremity—without an equivalent supply from the roots ; and because November, being perhaps the dampest month of the year, reduces this loss to a minimum, and thereby affords to the tree more time to right itself, by throwing out fresh and active rootlets and root-fibrils. This is but an extended application of the principle on which we go to work in striking a cutting of any valued or tender plant. With the aid of a hand-glass or other simple contrivance, we insure it such an amount of atmospheric moisture as will prevent an excessive tax upon its energies, by avoiding the deprivation of the moisture which it contains, and shutting it up, as it were, in its own cells. This, however, only until roots are formed, when the tax occasioned by the action of the outer air becomes a necessity to its existence, by drawing off superabundant moisture.

Let us for a moment contrast this with the system of spring planting. This often takes place in February, when its advocates say that the warmth of approaching spring already causes the buds to enlarge, and the sap to flow; and that when trees are removed in such a state, roots are readily formed in conjunction therewith, and the tree suffers less than at any other time. This appears feasible enough, and indeed there is every reason to suppose is so, whilst the tree remains with its roots intact in their winter home; but sever these roots in twain, as will have to be done more or less, and that violently in the process of removal—disturb this beautiful reciprocity of action between the parts, and will a renewal of growth then take place with a tithe of the vigour which would have been manifest had the tree not been transplanted? It is not likely that it should, though if a moist period should attend or follow the planting, its chances will be all the better; much will, however, depend upon the simple fact whether or no moist weather follows—weather which will go far to fully establish trees planted in the autumn. But should a dry period—more to be anticipated—succeed late planting, followed by penetrating harsh March winds, the chances of success will be greatly lessened, and still more so should the spring or summer prove dry and hot. This is why I advocate autumn planting.

Trees in process of removal should have every small root, or fibril preserved with the utmost care. Larger roots will sometimes need shortening to a reasonable length. As a rule, trees form a network of roots, large or small, extending about as far from the bole as the overhanging branches, and there in a general way, in removing reasonable-sized trees, the outer trench should be started. The place prepared for the reception of the tree should extend as far as possible beyond the radius to which the actual roots are likely to reach. This will afford the young roots a better opportunity to grow away freely when a start has once been made. Sufficient water should always be given after planting to thoroughly soak the fresh-moved soil throughout, that it may settle down uniformly throughout, so as to resist the action of the wind.

Digswell. WILLIAM EARLEY.

NOVELTIES, &c., AT FLOWER SHOWS.

AT the meeting of the Floral Committee, on the 15th of September, our two prime raisers of new Verbenas, Messrs. Perry, of Birmingham, and Eckford, of Coleshill, came out in strong force, though Mr. Eckford was not so successful in obtaining certificates as Mr. Perry. The latter received first-class certificates for the following new *Verbenas*:—*Model*, salmon pink, with large deep rose centre, pip large and of fine shape; *Perfection*, a beautiful flower of a shining pink hue, the pip large, smooth, and circular, a flower of high quality; and *Wonder*, pale pink, with rosy purplish eye, the pip large, smooth, and of fine shape. In addition, Mr. Perry had *Mrs. Pochin*, bright deep pink, a pleasing and striking colour; *Mauve Queen*, opening pale mauve, but getting too pale as the flowers age; *Richard Dean*, dark plum purple, with conspicuous light eye; and *Chairman*, purple, with a white ring round a dark eye. Mr. Eckford received a similar award for *Anna Keynes*, a very fine and distinct variety, of a dark mulberry purple hue, the pip very fine and smooth, and the truss grand; and a second-class certificate for *Lotty Eckford*, brilliant plum colour, with small lemon eye, the pip rather small, but bright-looking.

There was a great number of *Dahlias* staged, though but few in good condition. A fine and distinct flower was *King of Primroses*, shown by Mr. Geo. Rawlings, of Romford, and to which a first-class certificate was awarded; the colour was quite new, being of a soft primrose, the flowers large, full, and of fine build. Second-class certificates were awarded to Mr. C. Turner for *Queen of Beauty*, the ground colour blush, tipped with magenta, but wanting outline and finish; and for *Louisa Burgess*, a fancy flower, with a salmon buff ground, striped and flaked with crimson, good outline and petal. A very promising flower, named *One in the Ring*, came from Mr. J. Keynes; it has a pale ground, edged with rosy purple, the substance and centre good, but with a tendency to coarseness, probably owing to being somewhat out of condition. The uncertificated flowers were numerous enough; perhaps they will be seen a twelvemonth hence in better character than was apparent on this occasion.

The meeting of the Floral Committee, on the 6th of October, was the occasion of the last appearance of new Dahlias for this season. Late as it was—when flowers might be reasonably supposed to be out of character, the Committee did not shrink from awarding a first-class certificate to Mr. Geo. Rawlings, for *Emperor*, a flower of much novelty of character, the colour bright claret, shaded with crimson, and tinted with purple, a promising flower, of good build, outline, and centre. In the third year of its exhibition as a new variety, Mr. W. Bragg, Slough, received a second-class certificate for *Commander*, a pleasing-looking buff flower, the ground suffused with gold, the backs of the petals shaded with rosy crimson, florets and outline good. A very promising flower was shown by the Rev. C. Rowe, of Bury St. Edmunds, and one that is likely to take a good position next season, but as but one bloom was shown, the Committee could not take cognizance of it; it was named *Suffolk Gem*; the ground colour is reddish salmon, edged with violet, and slightly tipped with yellow.

A first-class certificate was awarded to a very pretty Silver Variegated Zonal *Pelargonium*, *Mrs. Col. Wilkinson*, exhibited by Mr. Coomber, gardener to Lieut.-Col. Wilkinson, of Highgate. The leaves are well formed, stout, with a finely marked bright rosy zone, and the habit is thoroughly good. *Lobelia Erinus speciosa alba*, from Mr. Chambers, of Beddington, was a nice-looking plant enough, but the flowers were tinged with blue, as if they were not really self white. The plant was not in a good condition, but should the flowers prove to be pure white, and the habit good for bedding purposes, it will prove a great acquisition. Mr. W. Groom, of Ipswich, who has raised some capital *Zonal Pelargoniums*, had at this meeting the following new kinds :—*John Hopper*, rich deep salmon rose, a very pleasing hue of colour, habit good; *Climax*, carmine salmon, with white centre, the flowers of good shape; and *Mrs. Sach*, a remarkably promising white, the flowers slightly tinged with pink—all good flowers, which will, perhaps, be seen again next season in better condition. R. D.

HEATING VINE BORDERS.

THE question of bottom-heating Vine borders has been opened by a correspondent at p. 198. Let all those who have been successful, join in giving the results of their practice, and then we may arrive at something like a satisfactory decision. If there is nothing in the system, whatever method of applying it may be adopted, it is adding a great deal of unnecessary expense to the more simple practice in general use. Hence it is not to be supposed that anyone would recommend it without being thoroughly convinced of its merits. My own practice has led me to discard it years ago, and the more I hear and see, the more I am convinced that it is wrong in principle. There are no doubt many places with a cold wet subsoil, which are sorely puzzling to the early forcer, and have brought about the use of concrete, rubble, and air drains; we know now what these will do with tropical plants, and we can add to these careful top-covering, but this is altogether different to attempting to heat a mass of soil, with pipes laid in cement or other drains, with abundance of ventilation. By such means we secure simply the latter, for no heat will penetrate soil, if it can escape by means of ventilators, unless, indeed, it is applied in excess.

To understand this more clearly, let anyone take a portion of a small pit, having a good command of bottom heat, and make a division of wood, so that the process can be watched; then after covering the pipes with rubble, fill it up with good soil in the proportions used for a Vine border, and apply a brisk bottom heat. It will be found that the heat rises very slowly at first, for the simple reason that the active heat is stopped in its progress by the density of the soil, which it overcomes by degrees, taking up with it a portion of steamy vapour. As it rises it keeps a portion of the soil where this action is suspended, in a wet steam bath so to speak, and every accession of this heated vapour tends to render the soil a cold wet mass, far from congenial to any roots.

If a piece of tarpauling is placed over the soil a little way from the surface, it is found that as the heat rises in the border, the under part of the tarpauling will be covered with condensed vapour running in streams to the lowest part. This consists of the moisture and natural gases of the soil, acted upon and escaping by the action of the bottom heat. A handful of soil from the top of the rubble will show at once to a practised eye that there are no natural agents left in it likely to be useful to Vine roots; nor will water replace what is gone. It may be said that this is an extreme example, but a Vine border is made to endure for years, and affords plenty of time for this process to be carried out. It must be borne in mind that heat rises more quickly through soil that is pulverised. F.

MONTHLY CHRONICLE.

FUNGI are for the most part regarded with suspicion, arising in great measure from ignorance and prejudice. Excepting the Mushroom, Truffle, and Morel, very few of them are employed as articles of food, though many are most wholesome and nutritious. Still, as there are numerous poisonous kinds, caution in their use is necessary, and, above all, the dissemination of popular information concerning them is desirable. Hence the public have reason to thank Lady Dorothy Nevill and Mrs. Lloyd Wynne for the prizes they offered at the meeting of the Royal Horticultural Society on the 6th ult. The education of the eye, resulting from a public exhibition of this kind is the best of all forms of instruction. Dr. Bull, of Hereford, who gained the first prize, exhibited a very large collection, consisting of numerous species, arranged in four compartments, containing those which are confessedly edible; those which are edible, but not usually employed as food; those which are not edible; and those which are decidedly poisonous. The second prise fell to Mr. W. G. Smith, who had a smaller but very interesting collection. A stand of dried Fungi, from Mr. English, of Epping, prepared after a method peculiar to himself, formed an interesting feature of the Show, which we hope to see repeated in future years.

—— Bedding Pansies, says Mr. D. Thomson, may be had in a state to produce an effective display all the year round. The way to manage them for summer and autumn show is to put in nice young short cuttings under hand-glasses late in September or early in October, just sufficiently early to have them well rooted before the severe weather sets in; and in April or May to plant them out where they are required to bloom. The beds or borders should be well manured, and deeply worked.

—— The Golden Queen Melon, a hybrid between Bromham Hall and Golden Perfection, is, without exception, the prettiest Melon in cultivation. It averages from 2 to 2½ lbs. in weight, is of an oval shape, of a beautiful golden yellow, prettily netted, thin-skinned, juicy, tender and melting, and when properly grown and well ripened, of excellent flavour. Flavour in Melons is almost entirely a matter of good cultivation; hence the value of a variety possessing a good constitution, such as the Golden Queen, which is easily grown, and easily rendered of good flavour.

—— Some of the modern improved varieties of Cannas, are well adapted for flower-garden decoration, owing to the size and profusion of their flowers, and their continuous blooming properties. C. Bihorelli and C. grandiflora floribunda are particularly deserving of this recommendation. They are both dwarfish sorts, scarcely exceeding 3 feet in height. The first-named is a dark-leaved variety of moderate size, very floriferous, the flowers broad-petaled, nearly twice the ordinary size, and of a bright showy red colour. The other is of similar habit, but has green leaves and bright orange-coloured flowers. Both are admirable flower-garden plants.

—— The Examinations of Gardeners by the Society of Arts, and the Royal Horticultural Society, seem to be exciting more interest, as their beneficial influence becomes more fully appreciated by young gardeners. Besides the *Gardeners' Chronicle*, Society of Arts, and Royal Horticultural Society's several prizes, which were taken by Kingston, Keenan, Wynne, and Burbidge, the result as regards the award of certificates was as follows:—

Society of Arts, April, 1868.

	Certificates.	
	Floriculture.	Fruit and Veg. Culture.
A. Bradley. Greenwich	2nd	2nd
F. W. Burbidge*	1st	—
D. Cargill, Liverpool	2nd	1st
C. Fryer, Lambeth	2nd	—
J. C. Higgs, Southampton	2nd	—
R. Inglis, Richmond	2nd	2nd
W. Jones Richmond	2nd	2nd
R. L. Keenan, Richmond	1st	1st
R. C. Kingston, R. Polytechnic Institution	—	1st
C. Lawton, Hull	2nd	2nd
J. Macpherson, Southampton	2nd	—
J. McArdle*	2nd	2nd
M. Middleton*	2nd	2nd
A. Parsons, Edinburgh	3rd	2nd
J. R. Pocock, Bromley	3rd	3rd
F. C. A. Thomson, Liverpool	3rd	2nd
B. Wynne*	1st	1st

*Chiswick Students.

Royal Horticultural Society, July 1868.

		Certificates.	
		Fruit and Veg. Culture.	Floriculture.
F. W. Burbidge	Chiswick Students.	2nd	1st
T. Bevan		2nd	2nd
W. Stewart		2nd	2nd
J. McArdle		2nd	1st
R. Barnes		3rd	2nd
John Smith, Chiswick		1st	1st
R. Lee Keenan, Kew		1st	1st
M. Middleton, Kew		1st	1st
C. Pillans, Kew		not passed	2nd
William Jones, Kew		2nd	1st
Robt. Inglis, Kew		2nd	1st
James McGregor, Kew		3rd	3rd
David McArdle, Kew		not passed	not pass'd
James R. Pocock, Bickley, Kent		2nd	1st
Robert Mackellar, Colworth, Beds		1st	1st

—— A new dessert Apple, called Coole's Seedling, has been recently shown by the Messrs. Veitch, and obtained a first-class certificate. It is a roundish ovate fruit, even and regular in outline, of a rich yellow colour on the shaded side, streaked and mottled with crimson; the flesh is very tender, juicy, and sweet, and with a fine flavour.

—— Among recent acquisitions in the shape of Ornamental Trees of a distinct character, a variety of the common Elm called *Ulmus campestris Webbiana* may be strongly recommended. The leaves are small and curiously folded, so that the pale colour of the lower surface is made to contrast with the deeper colour of the upper surface. As a standard, this new variety promises to be very useful for ornamental purposes.

MADRESFIELD COURT BLACK MUSCAT GRAPE.

WITH AN ILLUSTRATION.

THE Grape we now figure is one worthy of the warmest commendation both in regard to its appearance and quality. It was raised by Mr. Cox, gardener to the Earl of Beauchamp at Madresfield Court, Great Malvern, some half dozen years since, and was selected as the best of a batch of seedlings obtained from the Muscat of Alexandria and the Black Alicante intercrossed in both directions. It proves to be a Grape of excellent quality, setting its fruit as freely as the Black Hamburgh, than which it takes about a fortnight longer to ripen.

The Vine is of a robust constitution, producing short-jointed wood, with prominent pointed eyes. The fruit-clusters are large, regularly tapered, and handsomely shouldered. The berries are large, of a longish oval shape, like those of the Muscat, perfectly black, and covered like those of the Alicante with a fine thick bloom. They are attached by stout warted footstalks. Their skin is tough; and their flesh is firm, juicy, and rich, with a fine, luscious, muscat flavour. The leaves are bristly, deeply lobed, and serrated, with reddish stalks and midribs.

With such qualities as those just indicated, it is not surprising that the Madresfield Court Grape should have won a first-class certificate when exhibited before the Fruit Committee in August, 1867, and that it should have been designated as a splendid new Grape. In truth it comes in as a very useful auxiliary to the few thoroughly good Grapes already in cultivation, nearly if not quite equalling the Muscat of Alexandria in quality, and indicating, by its stout firm footstalks and leathery skin, that it will rank amongst those especially useful kinds which hang well after they have reached the ripening stage.

Messrs. J. & C. Lee, of Hammersmith, are the fortunate holders of this pomonal prize, and to them we are indebted for the opportunity of publishing the annexed figure. M.

THE HELIOTROPE.

I OBSERVE at p. 248 an interesting article by Mr. Forsyth, on this fine old plant, and I wish to add a few additional remarks on its culture in the gardens here. In the summer of 1867 I found that a plant of H. peruvianum had taken possession of a corner in a peach pit; it grew at a surprising rate all through the summer and winter, and furnished an immense supply of cut flowers. This plant had been accidentally raised from seed, or some small cutting had been inserted between the stonework and soil in the pit. Every gardener knows the value of

Heliotrope flowers, both for colour and perfume, in mixed bouquets, or for decorative purposes. The plant here at this date is a large bush, and might have been 8 or 4 feet in height had it not been cut in so much for the flowers. Where room can be spared for it, there is no plant that I know of more worthy than the Heliotrope of being planted out either as a climber or bush in the greenhouse or conservatory. The surprising growth and beauty of the plant is never seen when grown in a pot; and when planted out-doors, the winter settles its pretensions before it arrives at any great size.

Welbeck. WILLIAM TILLERY.

ASPIDISTRA LURIDA VARIEGATA.

THIS plant is worthy of special recommendation for the striking effect of the leaves, especially when placed in the centre of a bank of Ferns, or on a table of Orchids where it is seen to command attention. The broad bands of white contrast well with the dark green of the older leaves, while the sap-like green of the younger ones, ribbed or banded with white, in which there is the slightest trace of sap-green renders the plant conspicuous anywhere. When well contrasted amongst a variety of different forms or colours, it serves a good purpose, and is a mark upon which the eye will rest. In this age of many-coloured leaves it should not therefore be neglected. Whether this is the same as others which I see in the continental catalogues under a different name, I am not able to say.

Southend, Darlington. JOHN RICHARDSON.

GRAPE CULTURE.

RESUMING the remarks broken off at page 245, I observe, that the practice of mutilating the Vines instead of carefully pruning them, cannot be too severely condemned. Careful and judicious pruning, the result of experience and discretion, advances or retards a crop of Grapes very seriously, and at the same time adds very considerably to the expenses of production. To shave Vine rods so close as to cut off all lateral shoots is simply "horticultural barbarity;" to cut those laterals immediately beyond a plump sound bud is good practice, and productive of satisfactory results. To allow too many shoots to proceed from the joints is simply distressing the Vines unnecessarily; but to select the most vigorous and healthy, regulating the operation by the space which the roof affords, to train them carefully, so that they do not interfere with their neighbour's portion of it, and to shorten the shoot at the leaf beyond where the bunch of bloom shows, provokes the growth of the bunches, and concentrates the juices of the Vine upon them, without allowing it to expend itself unnecessarily. Thus far it will be allowed, I hope, that I have proved the theory of Vine culture to be simple and easy, and only requiring the amount of judgment which every gardener, whether amateur or professional, should possess previous to undertaking the management of a vinery. The continuation of the growth on the leading shoots of the Vine, so as to draw on the sap should not be too much interfered with, but should be allowed as far as space will permit, so as to secure a good development of the roots.

Thinning the Grapes is the next process, and should commence as soon as the berries approach the size of small peas. One good thinning is sufficient. It is simply absurd to allow a number of small berries to remain on the bunches until they are half grown, as they draw their resources from the Vines to no useful purpose, which resources should be economised for the berries which are intended to form the bunches. Thinning is an operation best left in the hands of energetically-minded assistants, who have predetermined to have ten good berries where forty or fifty have formed and would be produced to the detriment of the whole, if the liberality of bountiful Nature were allowed to continue its course. Swelling the Grapes is a process which common sense (that uncommon thing), suggests must be the result of good feeding and moisture; but as these elements are already provided for by the instructions relative to the formation of the border, the ventilation and the syringing, I need say little more respecting it than recommend the reader to follow those instructions.

To be forewarned is to be forearmed; and ventilation being such an essential element to the proper colouring of Grapes, growers provided with the necessary means already alluded to, will do well to take advantage of them to produce the desired effect. Red spider, which is the greatest pest of our vineries, may, and must in extreme cases, be thwarted in its destructiveness by the free application of sulphur vivum reduced with lime to the substance of thin paste (laying it on with a painter's brush), on the surface of the hot-water pipes or brick flues. As excess of stimulant destroys the mental as well as physical activity of the operator: so will sulphur vivum have the same effect on the insect pest—and the Vines also, if proper care and attention is not devoted to its application. It is the true and perfect antidote, but its use must be combined with a sufficient amount of moisture, so as to guard against burning the foliage by a too dry atmosphere.

When Grapes have reached the stage of colouring, this process, with the continued swelling goes on very rapidly, and it often happens that the Grapes are fit for gathering within twenty-one days of the period when they commence taking colour. An additional fortnight with abundant air completes the ripening, and induces the sweetening which renders them so much more acceptable to the palate. This latter question is more a consideration for the consumer than the grower, whose object is to produce a fine-looking article which will bear carriage to a good market, and there fetch a good price. The Vines having produced their crop of Grapes should not be unnecessarily cropped or the foliage destroyed, as they continue to grow and develope their roots for some time. Artificial heat may be withheld, but the gradual progress of the plants should be permitted until they show the usual symptoms of maturity, by the discoloration of the leaves. The leaves should not be cut off, but allowed to remain for the more perfect development of the buds upon which the ensuing year's crop depends.

I have not referred to the best means of heating a vinery, as I believe the question has long since been decided in favour of hot water as against brick flue, and that, wherever the former can be conveniently adopted it is always preferred. It is better, and after the first outlay it is cheaper to keep going than the flue system. However, it is of less importance with Vines than with other artificially-grown crops, inasmuch as they are so hardy and luxuriant when they are properly manured and carefully trained. Some of the finest Grapes I have sent to Covent Garden Market were grown and forced with a common brick and pipe flue, of a still more common style of construction—aye, common-looking enough to excite most indignant contempt of a hot-water apparatus manufacturer. Still it was so: the Vines very healthy, the bunches ranging from ½ lb. to 2 lbs. weight, and the berries large, plenty of them, and of the very best colour.

Simple and beautiful as the course of Nature is, her progression is undeviating and certain, and so are the means to be practised for the development of her resources. Art must be the handmaid of Nature; and the more correct the judgment we form as to adopting means to assist her, the more certain we shall be of success. A fine grapery with an abundant crop of fruit, the bunches hanging from the roof intermixed with the foliage in the most luxuriant manner, is a beautiful sight. Purple, black, and amber-colour, with green—what pretty contrasts to feast the eye upon! not to say a word as the intrusion of the thought, ' I wonder how they taste."

Jersey. C. B. S.

ACROPHYLLUM VENOSUM.

THIS is generally considered a very difficult plant to cultivate, but by following the plan I am about to describe, I have always found it to grow freely, and produce abundantly large spikes of its fine Spirea like flowers. Procure a young healthy plant in a 48-size pot; shift into a 32-size, using good fibry peat, broken into small pieces, and well mixed with a liberal quantity of silver sand. Provide ample drainage, over which place a layer of rough fibry peat, and pot firmly. Place the plant in a cool airy greenhouse, and never subject it to a high artificial temperature. Pay great attention to watering, as the plant must never be allowed to suffer from want of water at the roots, so that a fresh supply must be given before the ball of earth becomes dry; damp the foliage slightly morning and evening at all seasons, except when the weather is very wet. About the end of February it will require another shift, and if well rooted a pot two sizes larger should be used. One shift annually in February will then be sufficient, but always use good fibry peat and sand as above recommended for the purpose. The thrips must be looked sharply after and kept down, for if once allowed to gain a footing they will soon destroy not only the foliage, but the plant also. As soon as blooming is over, remove the seed vessels from the stems, in doing which care must be taken not to injure the wood, as the young growth continues on from the top of the flower spike, the point of which should be taken off above the first set of leaves.

Somerley Gardens. HENRY CHILMAN.

THE WINTER DRESSING OF ORCHARD-HOUSE TREES.

ORCHARD-HOUSE trees, &c., may be kept free from insects by very simple means. The method I have adopted since making the observations noted at p. 44, is as follows:—As soon as the leaves fall, the trees are pruned, and well washed with cold water thrown upon them by a powerful engine. This washing is repeated two or three times, and it tends to remove dust, and possibly a portion of the insect ova, &c., which may have been deposited. The house is thrown quite open, and nothing more is done until the buds begin to swell in spring, when the engine is again brought into action on the morning of every favourable day, the practice being of course discontinued as soon as the blossoms begin to expand.

As soon as the fruit is set, if insects are found to be at all troublesome fumigation is resorted to; and it is found that with the aid of two simply contrived, but very effective fumigators, using a quarter of a stone of tobacco paper which costs 5*s*., mixed with ¼ lb. tobacco, which costs 1*s*., a span-roofed orchard house 80 feet long, 20 feet wide, and 12 feet high, can be filled with a dense volume of smoke, which kills everything in the shape of thrips, and of green or black fly. This operation is seldom required to be performed oftener than twice or thrice during the season.

With regard to Peach, and other trees trained upon walls in the open air, I would recommend in all respects similar treatment to that above described as adopted for trees in the orchard-house, substituting for the fumigation, in the case of the wall trees, a thorough syringing with a solution of Gishurst Compound, using about 4 oz. to a gallon of boiling water. This syringing, like the fumigation, will not be required to be repeated many times during a season.

The brown scale will sometimes attack the Peach and other trees in the orchard-house. When such is found to be the case, they must be removed mechanically, by being scraped or brushed off with a toothbrush, well washing the part to which they had adhered with a solution of Gishurst Compound, made in the manner above directed.

Culford Hall. P. GRIEVE.

SEASONABLE GARDENING HINTS—DECEMBER.

THE year now drawing to a close will long be remembered on account of its continued drought and great heat. The grass lands were completely burnt up during the summer months; white Turnips were a failure throughout the country; Peas and Broad Beans suffered severely, as did some other vegetable crops; and yet, notwithstanding, the season has been one of abundance. The cereal crops were never before harvested in finer condition; Wheat in most parts of the country has been abundant and of superior quality; Potatos are generally sound and free from disease, and the crop is in most places good; so that with Potatos abundant and cheap, and flour good and reasonable in price, the coming winter we may hope, will not be one of such privations to the working classes, as the last. In the garden, nearly all kinds of summer vegetables suffered severely, except such as were kept almost continually watered. After the fine rains we had, in the early part of August, everything revived wonderfully, and since that time autumn and winter vegetables have grown well. Fruits of all kind have been most abundant, and some of them very fine in appearance; I think I have never seen Plums, Pears and Apples finer. The wood of fruit trees has had every chance of being well ripened this year, so that we may reasonably expect good crops of fruit next season, except from trees that have been allowed to carry too heavy a crop this year—a thing of frequent occurrence, as outside the gentleman's garden very few people ever think of thinning the crop. This is one of the principal causes why we see fruit so abundant one year, and scarce the next.

The out-door operations for December depend in a great measure on the weather. In severe frosts little can be done beyond affording protection to any plants requiring it. In mild open weather alterations in progress in the garden or pleasure ground should be pushed on with all despatch, so as to have the work in a forward state when the busy season comes round.

At this season of diminished light, all plants should be kept at rest as much as possible. Plants in pits and frames suffer most from damp at this season; every precaution should be taken to prevent it, water being given only when absolutely necessary, and the lights being taken off for a few hours on fine days. Protection must be attended to in frosty weather. The principal difficulty in managing a collection of choice hardwooded greenhouse plants arises generally from the want of proper accommodation for the different classes. When a miscellaneous collection of plants is kept in one house, then much attention is necessary to keep the plants in a healthy condition. Whenever the state of the weather admits, air should be freely admitted, and a dry atmosphere must be kept, a moist stagnant one being very injurious to plants at this season. In dull weather gentle fires should be made during the day to expel damp, and in frosty weather just sufficient at night to exclude the frost. Pelargoniums have increased so largely of late, that they now form the greater part of softwooded plants in most places; if kept dry they will stand a low temperature, but they do best in a little heat all through the winter—though they should have plenty of air in mild weather.

I would again advise all intending planters of Roses, evergreen trees, and shrubs, to plant at once if the weather be favourable, and not defer it until spring. Tea-scented and other tender Roses should be protected; I do not advise the general pruning of Roses, trees, and shrubs at this season, but a good deal may be done with the hardier kinds when favourable opportunities present themselves, which will save time in spring. As the leaves are now all off the trees, every place should be well swept and cleaned, The borders should be dug to give a neat appearance. Before the soil gets frozen the bulb beds should be covered 3 or 4 inches deep with decayed leaves or tan.

If the kitchen garden be naturally of a heavy clayey nature, the ground should be thrown up in ridges, and lay exposed to the influence of the frost. At this season of the year there is not much cropping required; there are, however, a number of little matters that demand attention. Broccolis should be laid at once with their heads northwards. This is an old-fashioned, but nevertheless, an excellent plan of saving the hearts in severe weather; Celery should be finally earthed up if not already done. In case of frost the ridges should be covered with straw, fern, or shutters. Lettuce and Cauliflowers in frames should have all the air possible in mild weather. Parsley should be protected with hoops and mats, or what is better, a few lights, when they can be spared for that purpose. Seakale and Rhubarb crowns should be covered with litter to protect them from frost. A few roots should be covered with pots, surrounded by dung or leaves to force them, or they may be put into heat.

All fruit tree planting should be done as soon as possible, and then the pruning of fruit trees should be carried on with vigour—this is an operation of the greatest importance, and one that cannot be too carefully attended to. In the generality of Orchards the thing is altogether neglected; and in many places where we may naturally look for something better, we do not find that attention paid to it which it deserves. This is one great cause why we so constantly hear complaints about failing crops. The trees are so crowded with wood and spurs, that when they bear a crop they become so exhausted, that one or two years' rest is necessary before they can bear another crop of fruit. Trees that are carefully pruned every year—that have all superfluous shoots, and all superfluous spurs removed, will in most seasons produce crops of fine fruit. If any person who has not hitherto attended to this matter would take, say half a dozen Apple or Pear trees of the same variety, and prune and thin the branches and spurs of three of the trees, and leave those of the other three unpruned, he would soon be convinced of the advantage of proper attention in pruning fruit trees.

Stourton. M. SAUL.

HINTS ON TRANSPLANTING SHRUBS.

IN transplanting shrubs as well as very small trees, a common error is to place them too deep in the earth. This has arisen from the circumstance that by receiving more moisture, they often succeed better the first summer, at the expense, however, of their subsequent healthy growth. It is much better to plant shallow, imparting the necessary moisture by means of a deep mellow soil beneath, and by mulching above. The material for the latter may be short litter, manure, old tan or leaf mould. A surface consisting of these materials, raised to the height of a few inches, will occasion no injury whatever for a year or two, and will admirably equalise the moisture of the soil. Manure used in this way operates beneficially, not only in preserving moisture, but also in increasing fertility, the properties of the manure being carried down in solution by rains, especially if applied in autumn or winter.

The contrast between the hard and baked surface too often witnessed when the ground is left bare, and the moist and softened earth beneath a coat of manure or litter, can be only fully understood by means of actual observation. Its advantages were strikingly exemplified during the past hot summer; young trees and shrubs that were protected from drought by a coating of litter and manure, have not suffered in the least; while those not protected are perishing—staking may be in some instances necessary to prevent wind-swaying, or a one-sided growth, where there are imperfect or unequal roots; but usually if the shrub is furnished with good roots, and if care is taken while the earth is shovelled in, to spread them all out like the rays of an umbrella, they will serve to brace it evenly and prevent a one-sided growth; fixing by water, as it is termed, is often sufficient alone to preclude the necessity of staking.

Planting is most conveniently done by three persons, one spreading out the roots with his hands, and a second placing in the soil, while the third settles it by pouring water from the rose of a water pot. Although soft at first, the soil in a few hours dries, and hardens sufficiently to hold the newly set roots firmly. In transplanting Roses and some other small shrubs sufficient pruning of the top is rarely given; climbing Roses and those generally which throw up rapid and vigorous shoots will make a better growth by autumn if cut down to a few good buds when planted out, than if long portions of stem and branches are left; these indeed not unfrequently draw so hard upon the roots as to cause the death of the plant. On the other hand, I have seen shrubs transplanted in wet weather, with entire success after having grown 6 inches, by taking up all the roots carefully and drenching the soil well with water, at the same time very freely shortening back the shoots.

Osberton. EDWD. BENNETT.

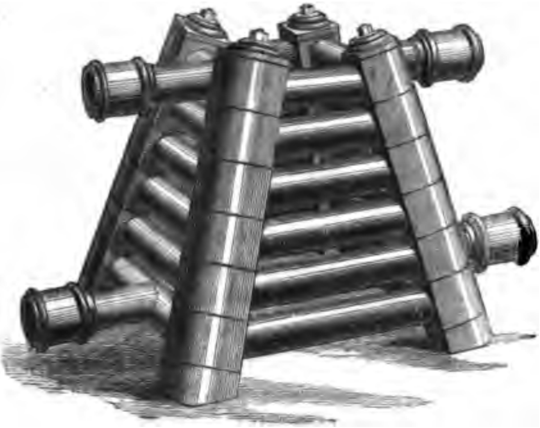
CLIANTHUS DAMPIERI.

SO much difficulty and disappointment generally attend the culture of this magnificent pea flower, that the following note on its flowering in the open air at Passy, near Paris, may not be without interest. The seeds were sown in February, and the plants were planted out in June, in peaty soil. They commenced to flower by the beginning of August and were in perfect condition at the beginning of October when I left Paris. A few plants forming an isolated tuft upon the grass, with silvery shoots more than 2 feet long, and the splendid flowers always open, looked, I may say, remarkably striking. They were not in a particularly warm or sheltered spot, and doubtless the same result could be obtained in warm and snug spots in our southern counties; sown in early spring and safely and gradually brought on to planting out time without being starved, or drawn, they would be in nice condition to put out about the same time with the tenderer bedding plants. They should have light peaty soil and good drainage, and they require neat staking to support their shoots; treated thus, this Clianthus would succeed in mild parts, and on sunny borders with us—trained on the low walls of glass houses, &c., it would prove a success over a great part of this country. The roots and tops too, should, however, receive a little more attention than usually falls to the lot of our wall-plants, and the plants must be annually raised.

Kensington. WM. ROBINSON.

DENNIS & SCRUBY'S A1 BOILER.

OUR attention has been recently directed to a novel form of hot-water boiler for horticultural purposes, which is called DENNIS & SCRUBY'S A1 Horizontal Tubular Boiler, and which, it seems to us, has some advantages to recommend it in certain cases. It may be briefly described as a square pile of horizontal pipes with vertical corner pieces, cast in separate tiers or "rings," the successive "rings" diminishing in area upwards, according to a fixed scale which admits of any two or more being put together. The "rings" are fastened together by means of long bolts and screw nuts. From four to six of them in ordinary cases (more if required) go to make up a boiler; but being all cast to fit exactly together, any number of the smaller or the larger pieces, according to the size and heating power required, can in this way be firmly put together. The form will be most readily understood from the annexed figure. The boilers are set directly over the fire, which is fed from the top.



One of the advantages of this boiler, is its shallowness, as compared with tubular boilers constructed on the vertical plan, which shallowness obviates the necessity for constructing deep stoke-holes. The more direct action of the flames upon the horizontal pipes than upon vertical ones, is probably another advantage, for by the constriction of the upper part of the boiler, the tubes are brought directly over the fire, and the flame from the fuel curls around each one as it passes upwards. The practicability of adding to the heating power, if found necessary, by increasing (or diminishing by reducing) the number of rings, may or may not prove a practical convenience, as may be the case also with the facility with which it is said the whole can be taken to pieces, and a new ring added in any part, should accidental injury accrue. Those who have had to form deep stoke-holes in wet or badly drained localities, will thoroughly appreciate the advantage of avoiding the necessity for deep digging, while securing the quick action of a tubular boiler. The setting is said to be simple and inexpensive. M.

HORTICULTURAL NOMENCLATURE.

"WHAT'S in a name?" is a question that has often been raised, and doubtless as often settled—at least to the satisfaction of the questioner. Now, whether taken from the political, literary, social, or commercial point of view, there is, we apprehend, much in a name; and if we descend from the general to the particular, we fancy that from a horticultural point of view it is not a matter of indifference. True it is that our greatest poet has said, "A Rose by any other name would smell as sweet," but we take leave to doubt whether it would always seem as fair. We have observed that certain names at once take hold of the public, are in every one's mouth, and make the novelty popular from the beginning, whereas in other instances the reverse of this is the case—the high qualities of the novelty require knowing to make the name popular.

If we look back on the past, or take the existing nomenclature of plants, we find much that is incongruous, and in bad taste. Botanists and horticulturists have alike erred here. The former have transgressed by adopting a frightful terminology, by compounding words of different languages, and by applying words which do not correctly interpret facts. As an instance of the latter, the word coccinea (scarlet), is often applied to things crimson, cœrulea (blue), to things purple, and alba (white), to things which would hardly pass as such in the murky atmosphere of the sootiest towns. The horticulturist, even of our own time, too often gives the reins to fancy, and after reading some of our plant catalogues one would almost think that the days of bright blue Roses, and luscious out-of-door Grapes, had at length arrived. It may be pleasant enough, and sometimes temporarily profitable, to give the reins to fancy, when the practice not only amuses the mind, but at the same time fills the pockets of the performer. But there is a large and increasing class of amateur gardeners in the community—matter-of-fact people, to whom this method of proceeding is obnoxious. There is delusion in it. The purchaser acts, hopes, realises—and is disappointed. The object has not fairly answered to the character given of it. We do not accuse the giver of these highly-coloured names of wilful exaggeration. The culture of flowers is not exactly that matter-of-fact occupation which some would represent it to be. There is poetry in it, and the ruddy glow of imagination will often unconsciously tinge the objects over which it delights to hover; but if *the names* are applied with a poet's license, *the descriptions* should at least be precise, definite, and truthful. If horticulture is to become a science to the few, and remain a source of recreation to the many, its votaries must remember that even in poetry, and certainly in actual life, the imagination must be restrained within due bounds, or the result will be neither intelligible nor satisfactory.

But these are not the only points on which reform is needed in the nomenclature of plants and flowers. Where is the cultivator who would not rejoice to see the long French names of Roses and other plants reduced to a state in which they might be spelt, pronounced, and understood by all? Could not the nurseryman into whose hands these novelties first pass, translate such names as are translatable, and re-christen others? for many of such names are at present a mere jumble of unintelligible sounds to those who are the oftenest called on to repeat them. To prevent confusion this work might be delegated to some tribunal whose authority would by common consent be acknowledged—and followed. We once knew an ingenious labourer who remembered the name of the Rose "Je me maintiendrai," by assimilating it with the words "Jemmy maintain me," and we have heard more than one philosophic nurseryman mourn over the loss of time incurred in writing "Souvenir de la Reine d'Angleterre" five hundred times repeated, when "Ajax" or "Ino" would have answered every purpose.

Further, something may be said on the fitness of names. A flower that would well become the name of "Blushing Bride" would make a very indifferent "Alderman," nor should we expect to see exactly the same complexion in a "Vulcan" as in a "Venus." A large Gooseberry might appropriately bear the name of "Achilles," which would be far more euphonious and agreeable to ears polite, than such names as "Bang-up" and "Thumper," which exist plentifully among this class of fruit. In this, however, as in other instances, we would not advocate a change of names already established—they are short and easy enough, if homely or provincial—but that future names be chosen from a more refined vocabulary.

Finally, we have seen it somewhere suggested, and think the suggestion a good one, that newly-introduced species, the botanists' plants, should bear names coined from the Latin or Greek languages, expressive of some prominent feature; and the horticulturists' plants, what we are used to regard as mere variations of species, should have applied to them popular names in our own language. The names of the good and great ones of our own time, and of all time, offer for this purpose a rich repertory, from which we might freely draw.

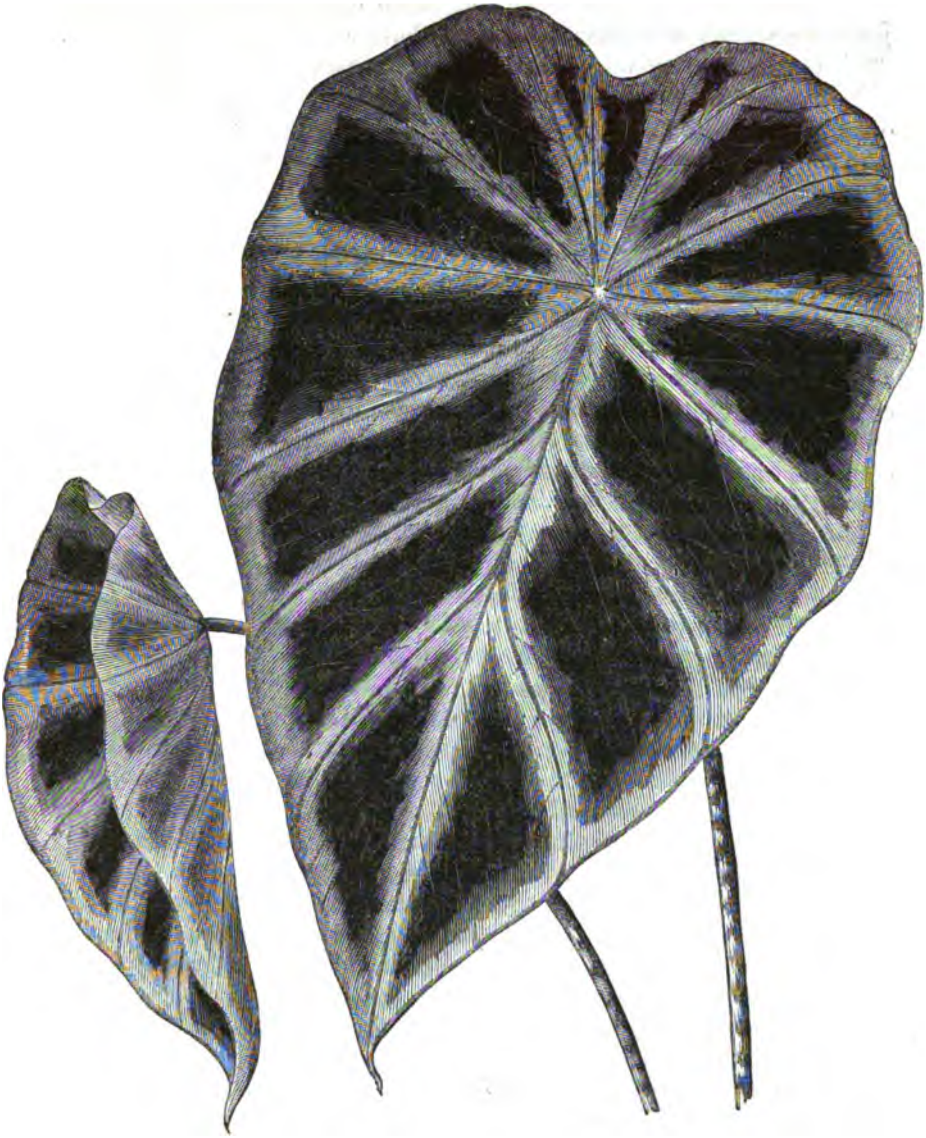
These suggestive remarks are thrown out with all good humour for the consideration of those into whose hands the naming of our plants and flowers usually falls. There are many cries for reform just now; and among small things is it nowhere more needed than in our horticultural nomenclature.

Waltham Cross, N. WILLIAM PAUL.

ALOCASIA JENNINGSII.

THIS most distinct and beautiful plant gained the medal as the best new foliage plant, at the Royal Horticultural Society's Show in May 1867, and has since that time repeatedly appeared at the principal metropolitan Shows, where it has always been greatly admired. It is so thoroughly distinct from any other Arad in cultivation, that it will be a most welcome addition to our picturesque-leaved stove plants.

It is a stemless stove perennial, with peltate, ovate, heart-shaped acuminate leaves, 6 to 8 inches long, supported on mottled stalks. The leaf-blades are of a beautiful clear green, marked in sections in the spaces between the principal veins (which are defined by bright green lines) with deep-brown almost black, wedge-shaped blotches. These regularly-disposed markings produce a very striking contrast, and render the plant one of the most distinct of recent introductions, whether for exhibition purposes or for home decoration. It was introduced from India, by the Messrs. Veitch & Sons, of Chelsea, to whom we are indebted for the annexed illustration.



The plant is of the easiest culture, requiring a good, rich, porous, loamy soil, and the moist atmosphere of a well-managed plant stove. M.

A WALK THROUGH THE VIA GELLIA.

HAVING had occasion during the past summer to visit Derbyshire on business, it occurred to us to give up one day to a walk through some parts of its beautiful scenery that we had not before traversed. Communicating this intention to our household, the only remonstrance we met with was from a bright boy of six, mildly put—"You 'll come back as soon as you *can*, wo'n't you, pa?"

Finding ourselves at Matlock one July evening, and having heard much of the picturesque and floral beauty of the Via Gellia, the mountain road to Middleton and the Black Rocks, we fixed on this as the morrow's excursion. We breakfasted and were on foot early, as all pedestrians should be, and taking the road by Cromford, were soon deep in the valley. Right and left, far up the hill sides, and deep in the beds of the almost exhausted streams, plants and flowers were strewn with a magnificent profusion. To attempt to enumerate and describe all these would prove tedious, as the species one is generally accustomed to meet with at wide intervals and distances seemed gathered together here. Besides, our English botany, never very deep, was sometimes tried severely in settling the species, and then there were species so universal as scarcely to need particularising. So varied and so abundant were the forms met with at every turn that we think the Via Gellia might be aptly called the Valley of Flowers. Never, certainly, in all our rambles (and in boyhood they were numerous and wide), did we find ourselves in close contact with such a magnificent collection of wild flowers, and we dwelt long in imagination on the aspect of this valley in the fresh and glorious months of April and May.

Up to this time we have been on foot nearly three hours, a great part of the time having been spent in gathering and examining at leisure the various plants met with; and now the pleasing murmur of a distant rill falls on the ear. Soon by the roadside we meet with a crystal pool, the water rushing down a mossy gully from a considerable height, and proving of a delicious purity and coolness. We pause here for rest and shade. How deep the stillness! broken only by the murmuring of this sylvan stream and the confused hum of innumerable insects winging their way in the noontide air. How delightful the change to one whose ordinary occupations are among the busiest haunts of men! The only sign of civilisation is the road just traversed: the only sign of domestication, an unusually wild, shaggy, and picturesque specimen of that picturesque animal the donkey. How delightful! But, alas! no human happiness is enduring or complete. The Via Gellia, beautiful as it is, is not altogether free from sub-mundane grievances. We are suddenly assailed by a host of fierce flies—lean, hungry blood-suckers. In vain we buffet, they are too active to be caught, too hungry to be driven off. Now we try to remember that we should return good for evil, and never retaliate except in self-defence. But it really was unendurable. What was to be done? Luckily we bethought us of our pipe. We filled, lighted, and blew a cloud upon them fast and furious. The battle was but for a minute: as suddenly as they had appeared they were gone. We arose, and with a hearty laugh pursued our journey, thinking to ourselves, "When a man gets a holiday but seldom, he cannot afford to let it be spoilt by trifles."

Hitherto we had scarcely quitted the road, being content with the numbers of species of plants growing by the wayside. But what are yon small red berries here and there rising above the leaves of some dwarf plant, and glittering in the sun? Strawberries? Yes, Strawberries! and very nice they are, too. They have not the flavour of "British Queens," but their slight agreeable acidity is very refreshing. We only wish they were a little bigger. Once off the road, once on the hillside, and we find objects of fresh interest in quick succession—birds, insects, geological specimens, which we admire, examine, and covet, but are obliged to dismiss. Descending again into the road we tread over immense breadths of Lily of the Valley of a vigour that a grower for exhibition might envy. Ah! what is this? A toll-gate? Truly so. But here, as in most rural districts, bipeds pass free. On we go without let or hindrance. Oh! the pleasures of pedestrianism, of which this is only one example. No railway extortions to combat, no trains to meet or rather to *wait for*, no coachmen or ostlers to fee, no 'busses to cram into;—on we go, turn to the left and commence the ascent of the mountain road to the mining village of Middleton.

"Only a mile, sir," says the toll-keeper, but a tough mile, *rayther*." We push on. To the right is a bank still strewed with flowers, differing somewhat from those we had found in the valley below, though generally we could only note those seen from the roadsides, not having time to explore the recesses, heights, and depths of the hillsides. On the road to Middleton we met with wild Raspberries, which we tasted and found very acceptable under the circumstances. On the left of the road we are ascending is a deep ravine, bottomed by the Via Gellia along which we have just passed The white road lies basking in the sunshine. The sides of the ravine are clothed with various forest trees—Ash, Mountain Ash, and Maple seeming the most abundant, the Ayrshire Rose and Hawthorn being also plentiful in places. As we ascend the species and number of plants seem fewer, and we altogether miss those kinds which delight in moist situations. The views from this road alone would repay a long walk or ride, but there are richer splendours in store for us. Middleton is at length reached, and one face of the Black Rocks is prominently in view. Middleton struck us as a village of poor dusky houses, but without any signs of *deep* poverty.

The cottagers had few exotics, but many wild flowers in their gardens, among which the Periwinkle and wild Chamomile seemed the favourites; the Mezereon and the Holly were of more than common luxuriance.

There is something exhilarating in the friendly recognition you meet with from everyone in these out-of-the-way places. It seems to say, "We are glad to see you, and proud of the beauties of our district, which we see by your face you admire." In all thinly-peopled districts there is at least the semblance of a universal brotherhood. In large towns, on the contrary, fashion makes it unfashionable to know even your next-door neighbour.

The Black Rocks are neither high nor difficult of ascent, but from the top there is a magnificent and extensive view—the village of Middleton on the left, the town of Cromford lying immediately beneath, and a glorious and apparently illimitable valley stretching away on the right hand. "The finest view in England, sir," said a respectable man in rustic garb. We thought probably so, as we gazed, and the conviction grew upon us that it was past our powers of description, and therefore we should not attempt to describe it. The breezes, the first real breezes we had exhaled for months, felt peculiarly refreshing, and we lingered till the descending sun reminded us that we were on foot, and far from our night's resting-place.

The top of the Black Rocks is decorated with Scotch Pines, their bare tough roots fantastically interlaced on the surface of the ground, while behind is a wood or forest of Firs. The faces of the rocks are bare, black, perpendicular, showing from the base as if of stupendous size. The base is adorned with trees—Beech, principally, with an under-growth of Fern which literally covered us with brown dust as we brushed through it. The form of the faces of these rocks, in some instances, reminds one of certain animals, particularly the antediluvian giants.

Thus ended our day's excursion, for the return was diversified only by a slight detour, taking Bonsal instead of Cromford on the way back to Matlock Bath. Tired in body but refreshed in spirit, we returned to our hotel, carrying with us a large bouquet of wild flowers, and fully satisfied that we had spent a day in and around the Via Gellia which would give rise to many pleasurable thoughts in the future. P.

VIOLA CORNUTA.

QUITE agreeing with Mr. Dean, that this bedding plant is better adapted for spring than summer work, I may add that October is a good time to plant for spring show. In October, 1867, I had several beds edged with Viola cornuta, and filled in with varieties of Crocus, Snowdrop, Tulip, Hyacinth, &c. The Viola was in full bloom in April, and was quite a picture until the end of June—the admiration of all who visited the gardens during these three months. After this it went off;

no amount of watering had any effect on it; the hot weather seemed more than the plants could bear. I had some strong plants put out at the usual bedding time, in May, but they did no good; in fact they were a complete failure, although they had a plentiful supply of water.

For spring and early summer flowers I do not know a plant more effective and pleasing, or better worth all the attention it requires. It is propagated by seeds, by cuttings, and by dividing the old plants.

Bloxholm Hall Gardens, Sleaford. DAVID LUMSDEN.

ON PRESERVING ICE.

GOING into the Ice house the other day and finding some of last winter's stock there in pretty good order, the following question occurred to me—Why do our ice stores often fail at a time when a supply is most required—viz., through August and September? To treat the question scientifically, and according to its merits, would require an abler pen than mine, but having been tolerably successful in meeting the demand upon me through the season, for a succession of years, and that too, when the ice stored has been both difficult to obtain, and sometimes of inferior quality, I offer a few remarks upon my practice.

I will presume that all those whose duty it is to secure a stock of ice have the preliminary arrangements completed, such as clearing the house; looking to the drainage—especially the main drain, which should be made quite secure against stoppages; providing the implements required, as well as straw, &c., for packing; and clearing of weeds and other impurities, the water that is to supply the ice. All of this should be done before the approach of frost, which sometimes comes on early and unexpectedly. The ice should not be taken from stagnant pools or ditches if it can be avoided, as in this case the full enjoyment of it is lost to the consumer, its impurity rendering it totally unfit for any other purpose save that of cooling wines and other viands in covered dishes. To fit the ice for table use it should be selected from the purest water. Unlike our American brethren, who with their broad and deep lakes, severe winters, &c., can cut their ice a foot in thickness, and pack it away in large solid blocks in which it will keep for two or more years, we Britishers are compelled through our fickle climate and milder winters, to store an article not more, often less, than 2 inches thick, and with a large percentage of snow in it besides. This latter ingredient makes the ice more porous, and consequently rendering it more open to the influence of changeable weather, unfits it for long keeping. Independently of this I believe local circumstances often exercise a certain influence prejudicial to the long keeping of ice, for in some localities little difficulty is found in preserving it, while in others where all possible care is taken, the attempt is often unsuccessful.

When the ice house is situated in a low, damp, and porous soil it is generally ineffective, but when on an elevated dry spot of sandstone or rock exposed to the north, the result is generally satisfactory, because it is then less influenced by the external atmosphere. Again, failures are in a great measure owing to the loose and careless manner with which the ice is thrown together, and in its not being made solid, as it ought to be, by pounding. Air being warmer than ice often sets it melting, and the tighter it is rammed together the less amount of air there is surrounding it.

After taking the ice from the water it is my custom to pass it through the hands of three sets of men provided with beaters; these break it as fine as possible before it goes to the packer, who receives it in small quantities, and spreads it evenly over the surface, ramming each layer with a heavy mallet. Straw in small bundles is packed tightly between the ice and wall of the house; this serves as a channel for the water falling from the ice, and from the dampness of the walls. When all is finished, the doors are stopped up with clay to prevent the ingress of air. This is repeated every time the house is opened. Some persons mix salt in large quantities with the ice, others throw water over it, but I have found no necessity for these additions.

Where ice houses are not large enough, or where none at all are provided, it is the custom to put ice up in stacks in the form of a cone; and if the above instructions are well carried out, there is no difficulty in getting a supply. Generally speaking, the greater the bulk the longer it keeps. To cover the heap with dry leaves, fern, or any similar material 2 feet thick, and to thatch this in a workman-like manner to carry off wet, is a precaution indispensable to such modes of ice preserving. Before concluding I should like to impress upon the minds of my readers what I consider the first and most important step in Ice preserving—viz., to take care to select a day for storing, lower in temperature than that in which the ice was frozen, or in other words while the frost is increasing in severity. The pores of the ice are then sealed up, whereby its keeping qualities are improved.

Lillesden, Hawkhurst. THOMAS RECORD.

NOVELTIES, &c., AT FLOWER SHOWS.

BUT very few florists' flowers appeared at the meeting of the Floral Committee, on October 20th. The best thing in this way was the golden-leaved *Fuchsia Regalia*, from the gardens of the Royal Horticultural Society, Chiswick, one of a batch of seedlings that had been raised there; the upper surface of its leaves was golden yellow, and the under side claret red, with veins of a similar hue; it was awarded a first-class certificate as a desirable and effective bedding plant. There were several new kinds of Variegated Zonal, and Gold and Bronze Zonal *Pelargoniums* furnished, but not in sufficiently good condition. The most promising were *Miss M. Walkling*, of the former section, the plant small, but bright-looking; and *Viceroy of Egypt*, of the latter section, having a bright and showy bronzy zone, on a golden-leaf ground; both were shown by Mr. Walkling, of Lewisham. *Golden Harvest*, a plain golden-leaved Pelargonium, from Mr. Church, Plumstead, was also a very promising variety, having large, bold, smooth leaves, of good substance.

At the meeting on November 17th, Mr. C. Turner sent from Slough a very fine lot of new *Variegated Zonal Pelargoniums* in excellent condition, some of them large specimen plants, and all finely marked and exceedingly attractive. First-class certificates were given by the Committee to some of them, by way of expressing their opinion as to the great value of these varieties as decorative plants, at this season of the year. Those so distinguished were named *Mrs. Headley*, *Miss Rutter*, and *Mdlle. C. Nilsson*. They were all finely coloured varieties with golden margins, and very bright zones, the two former with a rosy tint in the red zone, and vigorous growers; and the latter remarkable for its smooth leaves and its finished style of marking. The other varieties were *Hayes Rival*, *Mrs. Hugh Berners*, *Grand Master*, and *Senior Warden*, all finely coloured, and *Mr. Rutter*, a free, strong-growing, dark-zoned, heavily-coloured variety, of distinct character. There were also *Bright Star* and *Excellent*, two new silver-edged variegated varieties, the last-named being the brightest coloured. A special certificate was awarded to Mr. Turner, for the fine cultivation displayed by these plants.

Some good examples of *Primula sinensis fimbriata* were shown both by Mr. Turner, and Messrs. Dobson & Son, of Isleworth; the flowers were large, very stout, and finely coloured, one or two in Mr. Turner's batch of the *kermesina* type being especially fine. In both lots there were semi-double flowers, a kind of horn formed of petals issuing from the eye.

Mr. Salter, of Hammersmith, furnished some fine new *Chrysanthemums* of both the large-flowering, and Japanese sections. Of the former series the following gained first-class certificates:—*Princess of Teck*, beautiful delicate blush, finely incurved, and full, and *Pink Perfection*, delicate soft pink, very fine and distinct, and a full incurved flower. With those came *Beethoven*, pale bronzy lilac with slight golden tips, of the style and build of Oliver Cromwell, but much paler. First-class certificates were awarded among the Japanese kinds to *Dr. Masters*, a very fine variety, with long narrow florets, the outside portion of the flowers being reddish brown, with in some blooms a large pure yellow centre; and *Hero of Magdala*, with pale dull reddish flowers, the florets curiously gathered together in the form of bunches. Other new kinds were *James Salter*, pale bright lilac, having narrow ribbon-like florets, twisted in the form of a rosette; and *The Mikado*, with bronzy yellow thread-like flowers, and pale yellow centres. R. D.

MONTHLY CHRONICLE.

THE very best receipt for broiling Mushrooms or Agarics of every kind, is Soyer's :—" Place young fresh Agarics or Mushrooms on toast freshly made and properly divided. Salt, pepper, and place upon each one a small piece of butter (or a little scalded or clotted cream). Put one clove on the toast, then cover with a glass, and bake for a quarter of an hour, or broil before a quick fire for twenty minutes. Do not remove the glass until it is served up, by which time the vapour will have become condensed and gone into the toast, and when the glass is removed a fine aroma of Mushroom will pervade the table." A common kitchen basin, though not so elegant, will equally answer the purpose of a glass as a cover for baking.

—— A DOUBLE-FLOWERED *Allamanda cathartica* has been obtained by Mr. Hossack, of Alderley Park Gardens, Congleton. The flower owes its "doubleness" to a substitution of petals for stamens, as is the case in the allied Oleander. We presume it is a "sport," and if it is so, it is certainly desirable that it should be perpetuated by cuttings or otherwise.

—— WEEDS on walks may be kept under by watering the gravel with the following solution :—Dissolve 2 lbs. of blue vitriol in an old pan, and then dilute it with six or seven gallons of water; apply this through the fine rose of a watering pot, and will destroy every sign of vegetation, and after a shower render the gravel as bright as when just put down. The walk should not be trodden on when newly wetted, as the vitriol will destroy the shoes.

—— CERTAIN new Kitchen Apples have been shown during the autumn at South Kensington. Messrs. Harrison, of Leicester, sent one called Annie Elizabeth, a fine large seedling, with a brisk, crisp flesh; this received a first-class certificate as a kitchen Apple. Mr. Sampson, of Yeovil, furnished Benedictine, a large seedling of pale colour, with a fine brisk acidity, and said to keep till January. Messrs. Small, of Colnbrook, sent a large variety of good flavour, named Queen Victoria, but the Committee did not regard it as sufficiently distinct from Golden Noble.

—— A SIMPLE but useful garden contrivance, which is called by the meaningless name of Floreten, consists of two rings of galvanised wire of different sizes, connected by an intervening piece bent at a right angle. The lower horizontal ring is intended to hold a vase, a flower pot, or Orchid block; the upper ring serves to attach it to a nail in the wall, or a projecting branch. The contrivance, is susceptible of ornamentation, and is specially serviceable for balconies and window gardens, and for covering blank walls. The rings are made of various sizes, and may be had by the dozen, of the manufacturer, Mr. Tait, of Rugby.

—— AT Castle Kennedy, Mr. Fowler has this year, owing to the intense sun heat, placed tissue-paper over his Grapes to intervene between the sun's rays and the bunches, so as to prevent sun-stroke. The paper does not affect the colouring, and seems to possess the power of frightening away mice.

—— ONE of the prettiest of Basket plants for the roof of a hothouse, suspended among the climbers, is the old and half-forgotten *Russelia juncea.* A fine healthy plant in full flower, with drooping shoots a yard long, of the healthiest green, illumined with its coral flower-tubes, would show that the true position for this fine old plant is to be thus suspended in a basket.

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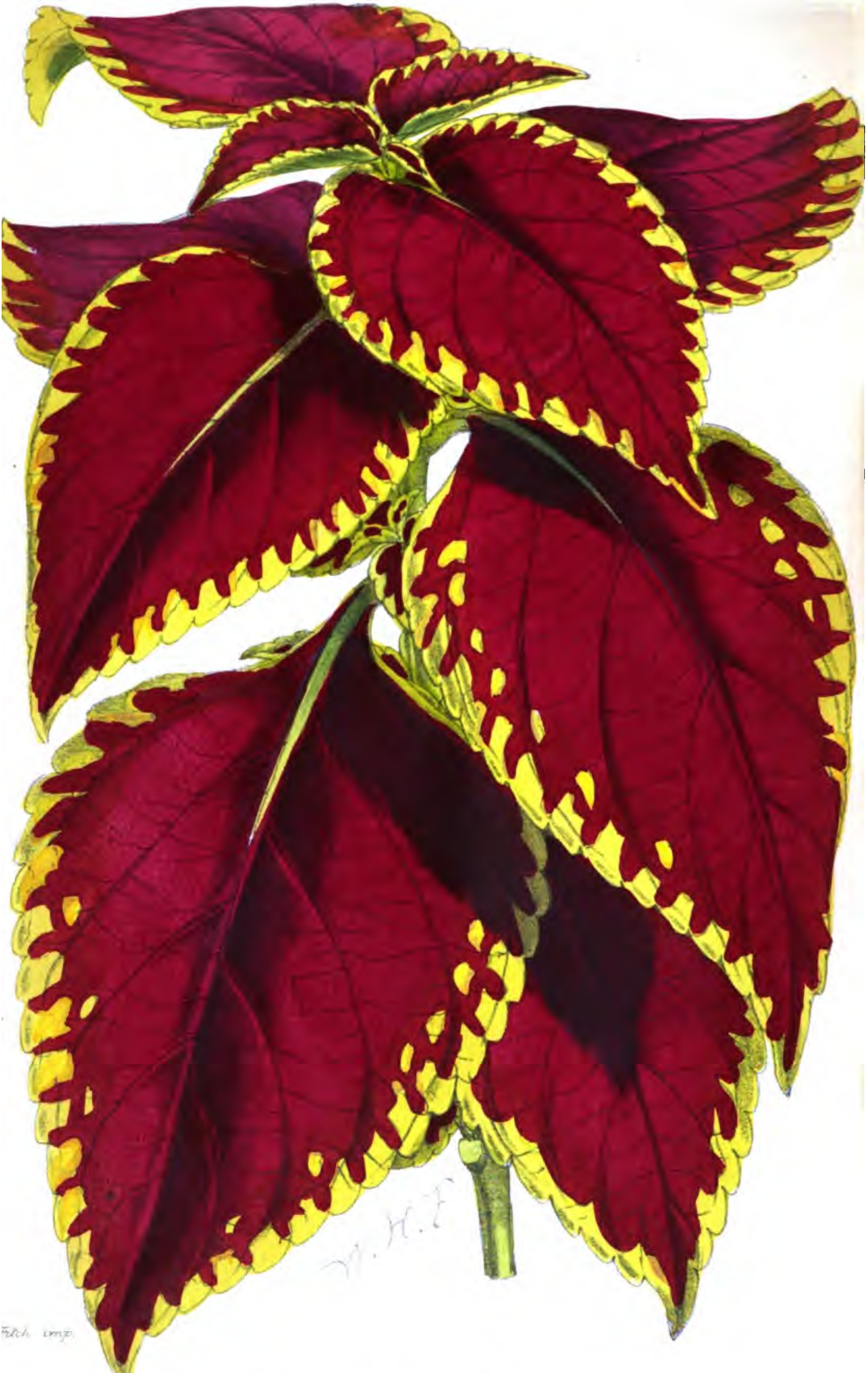

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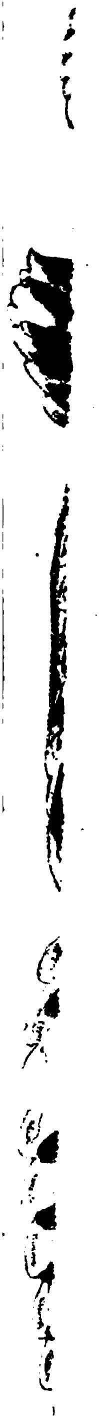


THE

FLORIST AND POMOLOGIST.

COLEUS QUEEN VICTORIA.

WITH AN ILLUSTRATION.

NO family of plants has, in modern times, so speedily acquired notoriety as that of the Coleus. It is not so long since that our gardens could boast only a few weedy species, of which the most important was the "Nettle Geranium" of cottage windows. Then came C. Blumei, the red-stained leaves of which first drew attention to the family as ornamental-foliaged plants; this being followed by C. Verschaffeltii, the still brighter colours of which have been turned to so good an account in conjunction with the silvery Centaureas for summer bedding purposes; and this, again, being succeeded by the almost black-leaved form of C. scutellarioides known as nigricans, the purple-veined C. Gibsoni, and the green-edged C. Veitchii.

The foregoing, with one or two trifling sports, were all that we possessed up to the beginning of the present year, when a set of a dozen novel hybrids, raised in the Chiswick Garden of the Royal Horticultural Society by Mr. Bause, on their appearance in public, created quite a *furore*, and realized, when offered for sale at Stevens' Auction Rooms, the large sum of £393. These included frilled-leaved, plane-leaved, and reticulately-marked forms, represented respectively by C. Bausei, C. Saundersii, and C. Scottii; but the ground-colour was green, with markings of a deep chocolate purple. Mr. Bull, taking the hint from Chiswick, was soon in the field with a second set of varieties, several of which proved to be desirable acquisitions; and thus the Coleus family may be said to have taken the public by storm, so rapidly did its beautiful and novel variations come forth. What the value of these new sorts as bedding plants may be, has not yet been fairly determined, but they are certainly very beautiful objects if only suitable to be grown as pot plants for conservatory decoration.

During the past summer C. Telfordi, a yellow-leaved sport from C. Blumei, was announced. This, from the contrast between its yellowish margin and chestnut-red centre, proved to be a very pretty indoor plant; and, taken in conjunction with the appearance of golden-leaved forms of so many other popular subjects, gave rise to a desire for golden-leaved Coleuses, which Mr. Bause was not long in satisfying; for in the past autumn, on crossing some of his former seedlings with C. Blumei itself, he succeeded in producing a batch of most brilliant-coloured varieties, far excelling all that had been previously known, and of which the beautiful plant we now figure is one. These new varieties are of indescribably rich tints of bronzy crimson, with a peculiarly lustrous glow which gives the effect of shot silk—the shot colour being in some cases of a brighter crimson, and in others of a magenta purple, while the margin is of a decided greenish yellow, differing in width in the different kinds, and forming a bead-like edging. That which has been named Queen Victoria, represented in our plate, and which has passed into the hands of the Messrs. Lee, of Hammersmith, is the brightest in colour of the whole series; while in the same style, but differing in tint as well as in breadth, either of blotch or margin, are others named Princess Royal, Princess of Wales, Duke of Edinburgh, and Her Majesty.

The same batch of seedlings yielded in Albert Victor an equally desirable acquisition, having tricolor foliage. This is of a very bold habit of growth, the golden margin broader than in most of the other sorts, and the bronzy red centre stained with large blotches of a deeper purplish red. Prince of Wales resembles it in the blotching, but has scarcely any yellow at the edge. To these have to be added some forms of the C. Gibsoni race, obtained at the same time, and equally in advance of all previous varieties of that type; they are of a yellowish green, more or less veined and blotched, but the colour is a bright purplish red, instead of the heavy, almost black, purple of the older forms. These latter have been named Prince Arthur, and Princess Beatrice.

We have certainly acquired in these golden varieties of Coleus some of the most beautiful-leaved plants of which our gardens can boast. Whether they will be available for the outdoor garden remains to be seen. The question will, however, soon be set at rest, as they will be distributed in quantity, in time for the next summer's planting; and from their vigorous growth, they may be expected to succeed at least as well as those previously grown. M.

THE FLAVOURING OF PEARS.

HOW shall we secure well-flavoured Pears? is a question often asked, and as regards some varieties, it may perhaps be answered with tolerable satisfaction, while as to others it is not so. Hence it would, I am sure, be both instructive and interesting, if those who have made notes on the subject would record their experience in this matter, in the pages of the Florist and Pomologist. Mr. Tillery has stated (1868, p. 243) that at Welbeck the finest and best flavoured Pears have been grown on a trellised arcade. In my own experience I have found that Marie Louise, Chaumontel, Flemish Beauty, Glou Morceau, Ne Plus Meuris, Zéphirin Grégoire, and Beurré Diel have in most seasons the best flavour when grown without the aid of walls. I have also noticed that Marie Louise, when grown on a wall, is of better flavour when obtained from a western than from any other aspect. Soil and situation have, however, much to do with both the size and the flavour of Pears.

The summer of 1868 gave an advantageous opportunity to trees in the open ground to mature their fruit and wood, such as is not often experienced in this country; therefore 1868 must be regarded as exceptional, and our ordinary summers must be taken as forming the rule by which we should be guided in planting. In this way we shall come to plant the right sort in the right place.

Somerley Gardens, Ringwood. HENRY CHILMAN.

DOMESTIC AIDS TO GARDEN CULTURE.

WIFE, daughter, sister! These are helpmeets in a garden, as everywhere else. How softly they touch, how tenderly they gather, how gracefully they bend over, how passionately they admire our favourite flowers! Every Primrose becomes a love, every Violet a duck, every Lily a darling, every Daisy a pet, in their charming vocabulary. The flowers, too, assume a lovelier form; even the Roses blush a deeper crimson beneath the witchery of woman's smile, and our fair sisters never look so irresistibly charming as when ministering to the wants, or gathering for their special use the treasures of the garden. Nevertheless I do not now refer to such ministrants as these.

Children, then? Bless their rollicking happy faces and joyous merry hearts! May our hearts never become so sere and old as to consider any home or garden scene complete, where their ringing laugh of boisterous gladness is not heard! Their presence seems even to thrill the flowers into a richer, fresher, fuller beauty. And then, oh! how heartily and happily *they can* dig, and plant, and sow, and wheel, and prune, and hoe, and rake, and weed, and water! What if they dig the flowers out as well as in, plant upside down, prune so severely that nothing is left, wheel earth upon gravel, and gravel upon earth, rake the soil up into tiny mountains, and level it down into deep valleys? The plants, like their household pets, get accustomed to their vagaries, and often grow up into vigour beneath their childish care, and expand into beauty with the growth of their own young lives. And our gardens would be prosy and dull without their gladdening presence and well-meant ministrations. But I don't mean children.

Domestic animals? Well, now, I believe in cats. They not only destroy our vermin, but they can learn good manners; and, properly trained, they never break a plant. How carefully they choose their path! how lightly they tread! and they are such soft, silky, sociable, sincere friends, that no home nor garden seems quite perfect unless enlivened with their complacent purring notes of gladness. Nevertheless, I do not mean cats. Fowls, then? These can also be taught some of the proprieties. There are sensible fowls, that can be admitted into gardens, that will conduct themselves in a quiet, dignified manner, and, as a rule, content themselves with gobbling up surface vermin. But occasionally even these will forget themselves, and dig down for subterraneous supplies, threatening at one and the same time to make for themselves and our dearest treasures one common grave; and consequently even the wisest of these can do but little to aid, and very much to hinder, garden culture.

No. The aid I allude to is widely different from any of these. Its chief characteristic is its *uselessness* in the *house*. It adds nothing to the comfort nor enjoyment of home life; but, on the contrary, endangers both in every possible way. It wages constant war with health, and is in solemn league with death. It is antagonistic to beauty or comeliness in our homes, and yet fosters the development of both in our gardens. Thus, by accepting its offered help, garden and house alike gain, the former in beauty, the latter in sweetness. With this clue to the character of our aids to garden culture, I leave the subject for the present.

Hardwicke House, Bury St. Edmund's. D. T. FISH.

PASSIFLORA QUADRANGULARIS.

THIS fine stove-climber flowered last year with me in great profusion, and ripened quantities of its showy and edible fruit. Where plenty of room can be found, it is a grand plant in a warm conservatory or stove, and I know of no climbing plant that can rival it for magnificent foliage and finely-scented flowers. The plant here has only been planted out three years in a rather confined border of a warm conservatory; but the soil is very rich, and during the different flowering periods plenty of liquid manure made from deer-dung was given it. The plant covers a large space on the roof, and on two or three occasions during the past summer the number of flowers opening every day could be counted by thousands, and their beauty, combined with their delicious fragrance, made the house one of the most enjoyable to be imagined. When fruit is required in any quantity, the flowers must be artificially impregnated—an operation which is easily performed in all the Passion-flowers. The fine foliage of this plant keeps remarkably free from any kind of insect, which is another great merit, and most favourable to its extended cultivation.

Welbeck. WILLIAM TILLERY.

POINSETTIA PULCHERRIMA.

FEW plants are more useful for decorative purposes during the winter months than the Poinsettia pulcherrima, and few more easily grown when there are the proper appliances. Probably the very best mode of propagation is the same as that universally in use for the Grape Vine. Eyes from ripened wood of the previous year's growth should be planted in April in rich light earth, and placed in a brisk bottom-heat; water should be applied very sparingly until they begin to grow and root freely, when they should be potted singly. They may be shifted as necessary, and finally placed in 6-in. pots, keeping them in heat until about the middle of June, when they should be transferred to the greenhouse, gradually hardened off, and finally fully exposed to the air, under which circumstances they should remain until the beginning of September, when they must be again removed into the stove, and by about the middle of November their magnificent whorls of scarlet floral leaves will appear, and will remain for six weeks or two months in great perfection. They will now bear warm conservatory treatment, if due care be taken in gradually hardening them off.

Plants grown in the way just indicated will only produce one flower-head. When larger plants are required, they should be kept growing in the stove after flowering up to the middle of June of the following year, when they should be partially dried off (*i.e.*, water withheld from them for a week or two), previous to cutting them down. This drying-off is necessary to prevent their bleeding. Cut down the plants about the beginning of July, and as soon as the young shoots commence to grow they should be turned out of their pots, the balls reduced, and placed again in pots of the same size as before. They require to be kept in a nice growing temperature, until they receive their final shift, which should not be later than the middle of August; and if they have progressed well, they might then be put in 9-in. pots. The after-treatment will be exactly the same as recommended for the small plants.

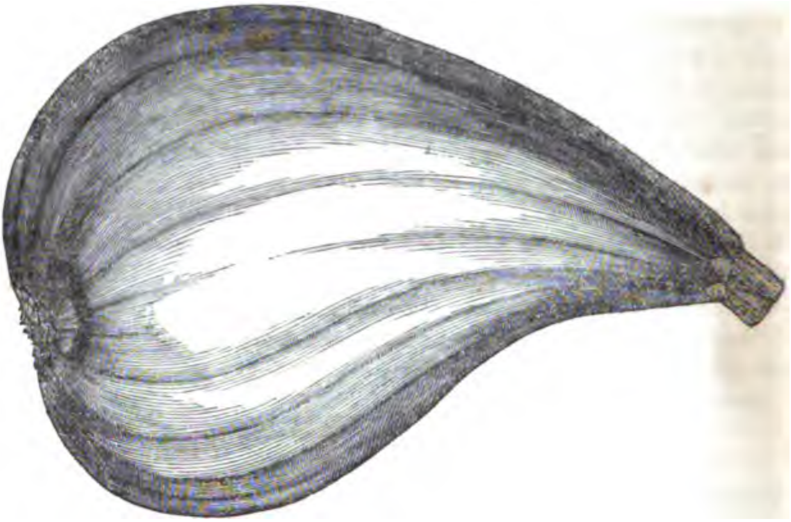
These plants are excellent for drawing-room decoration, and the dwarf ones more especially for furnishing plant-cases.

South Kensington. GEO. EYLES.

NEGRO LARGO FIG.

ALTHOUGH the Fig is one of the most extensively cultivated, most nutritious, and highly prized of fruits, the comparative indifference with which its cultivation has been treated, in all except the most extensive gardens, is such as to excite the amazement of those who know the facility with which it may be grown. There are exceptions to this statement, but they are so few as only to prove the rule. This indifference to their culture, is the reason why there has been till lately, a very limited knowledge among us as to the superior excellence of some of those splendid Figs that are to be met with scattered about in various parts of the South of Europe, and on the shores of the Mediterranean, where the Fig forms so important a feature in agriculture, and so valuable an article of commerce. The taste, however, for Figs as dessert fruit is rapidly on the increase among us, and as the knowledge of their culture extends, and the successful management of the fruit while ripening is better known, we shall hear no more of the repellent disgust with which people have been accustomed to regard what they call "green Figs." We have eaten "green Figs" in what would be considered first-rate establishments, which we could compare to nothing but an insipid herbaceous poultice; and we have also eaten them in the condition of the most delicious sweetmeat. But to have Figs worth eating, we must have—as in every other kind of fruit—sorts worth growing, and among these there is one brought to our notice by Mr. Fleming, of Cliveden, which is one of the most remarkable in size, quality, and fertility, it has been our fortune to meet with. The following figure and description from Hogg's *Gardeners' Year-Book* will convey to our readers an idea of this superb fruit :—

"This is a noble-looking Fig, and one of high merit. The fruit is of the largest size, oblong obovate or pyriform. Skin jet black, marked with longitudinal ribs extending the whole length of the fruit. Eye open, and generally with a globule of syrup dropping from it when quite ripe. Stalk short. Flesh pale red, very tender and juicy, with a rich, thick, and highly-flavoured juice. When highly ripened, the flesh and skin together become quite melting, and form a most delicious sweetmeat. This variety is in the possession of Mr. Fleming, of Cliveden, who exhibited the fruit at a meeting of the Fruit Committee last autumn. In a communication from Mr. Fleming he says, 'Out of twenty sorts from the Spanish frontier, this is the only one that has fruited. The habit is good, and for growing in pots it is unequalled by any other Fig I know. The plant from which the fruit was gathered was grown in an 8½-inch pot, and brought to perfection three dozen fruit weighing from three to four ounces each.'"



H.

DENDROBIUM NOBILE FOR WINTER BLOOMING.

CONSIDERING that nearly every gardener in Great Britain and Ireland is expected to supply cut flowers and flowering plants for decorative purposes, it is surprising that such plants as Dendrobium nobile and its varieties should not be more frequently grown, especially for the supply of winter and spring flowers. Even when there is no plant stove proper, these Dendrobes may be grown and flowered every season in profusion, if such houses as vineries are at command.

The early spring, when the plants commence to grow, is the proper time to divide or repot them if required. Fibrous peat, with all the fine earth shaken out, with half its quantity of sphagnum moss, and small lumpy charcoal, form the best potting material; through this, when properly prepared, the water will pass as through a riddle; and this is essential to the healthy action of the roots. In potting, good drainage must be secured by placing a crock over the drainage-hole, hollow side downwards, then smaller ones over this in such a way as to secure perfect permeability. In a 6-in. pot 2in. deep of crocks will be sufficient.

Where large specimens are not required, 6-in. or 8-in. pots are large enough to furnish nice useful plants. Before potting, cut the dead roots clean away, and place a little sphagnum over the crocks as a protection to the drainage. In potting, work the compost carefully among the roots without bruising them, the base of the stems being an inch or two above the rim, and just clear of the potting material; tie them to stakes sufficiently firm to keep them steady until they make fresh roots, and give a good watering with well-aired water. The plants must be placed not too far from the glass, where heat, light, and moisture can be secured to them, and where they may be shaded from strong sunshine only—for too much shading is injurious. They must not want for moisture at their roots, although water must be given with discretion, and in all cases as warm as the atmosphere in which the plants are growing. This is essential, and applies not only to the plants here treated of, but to all others grown in the stove or greenhouse. The plants during their growth must be kept clear of insects, by occasionally washing them with a sponge and warm water. A minimum temperature of from 60° to 65°, and a maximum of from 70° to 75°, will suit them, with a moist atmosphere during their season of growth. When the growth is completed, a drier and more airy atmosphere must be supplied, in order to ripen the stems. This ripening process, during which they must be more exposed to sun and light, is the secret of securing with certainty a profusion of bloom. Water must at this time be gradually withheld from them, until—say by the end of September—it is withheld altogether, or nearly so, only just enough being given to keep the stems plump. From this time a still cooler place, such as a dry greenhouse, will suit them.

About the middle of November, when the flower buds will be forming, they may be taken into a warmer house and have a gradually increasing supply of water, which, together with the increased warmth, will bring out their flowers by the end of December. If not required so soon, they can be retarded by keeping them longer in the drier and cooler house. By introducing into heat, say once a fortnight, a plant upon which the flower buds are formed, the flowering season may be kept up for five or six months in the year, where there are, say, a dozen plants to work upon. The proper flowering season is the spring months, but by resting the plants both earlier and later, it may be prolonged from November to June.

As soon as the plants have done flowering they will begin to grow, and if repotting is required it must at this time be done, introducing them into heat and moisture, as before. Do not wait until all the plants are in a fit state for potting or growing, but attend to each as it comes to require it. The stronger the plants grow, the greater the profusion of flowers they will produce. The flowers are borne upon two-year-old stems, in pairs or threes, at every joint, from the top for at least three-fourths of their length downwards, and *en masse* have a very rich appearance; in a dry and cool place they will keep fresh for four or five weeks.

Dendrobium nobile is, among flowers, as much the gardener's friend as the Black Hamburgh Grape among fruits. It is not requisite to pot it every year; one good potting in sound, lasting, porous material will serve for two years at least. The above treatment is applicable to the following species and varieties:—Dendrobium nobile, and nobile intermedium, D. cœrulescens, D. Wallichianum, D. Linawianum (moniliforme of gardens), and many others.

W. MOORE.

THE NEW ROSES OF 1867.

RECENTLY I have given an alphabetical list of forthcoming New Roses, with *the raisers' descriptions*, and it may prove interesting to lovers of this flower to hear something of the novelties of the preceding year, from my own observation. I buy every year some forty or fifty of the new varieties. As a matter of business, half that number would suffice; but I must confess that rose-growing has always been a hobby, as well as a matter of business with me; and the extra plants admit of my mounting my hobby in my own way. True, they cost money, but what hobby does not? Then, again, one knows *beforehand* what this hobby will cost, which certainly gives rose-growing an advantage over some hobbies—horse-racing, to wit; and there is no fear of breaking one's neck or blowing one's hand off in rose-growing, as is possible in hunting or shooting. If there is no strong excitement here, no display calculated to call down plaudits from our fellow men, there is a refined intellectual enjoyment to be found in it, healthy mental exercise, and plenty of muscular exertion, if we so will it. So, at least, I have found it over the last thirty-three years, and constantly meet with fellow-workers who speak of their experience in similar terms.

I had better flowers, and more of them than usual from the novelties of 1867. Perhaps the brood was not above the average in quality of sorts, but the plants were better, to begin with. To digress here, for a moment,—how is it that nearly all the new roses are described as "vigorous," when often one-third of them will hardly grow at all? Do the raisers delude themselves by dealing in hopes, instead of with facts, or do many kinds really vigorous when beginning life anew from the seed, fail and sink under the fast life which, if there is anything in them, they are often compelled to lead? Certain it is that some roses at four years are as old or older than some men at fourscore. This is a nut to crack in the closet rather than in the garden, and commending it to the thoughtful consideration of our vegetable physiologists, I pass on.

Aristide Dupuis (H.P.) was one of the first to unfold its blossoms, the quality of which is excellent; the ground colour is slate, flamed with scarlet; the flowers large, full, of good form, and produced in abundance. The habit is vigorous and good.

Alice Dureau (H.P.) is an exceedingly pretty rose, although of a common colour—clear rose; the flowers are large and full, of globular form; the habit and constitution seem good and vigorous. This rose was raised and sent out by Mr. Vigneron, of Olivet, near Orleans.

Baron Haussmann (H.P.), which must not be confounded with Baron*ne* Haussmann, is a good rose; the colour bright red, the flowers large, full, and of fine form. The growth is vigorous.

Boule de Neige (H.P.) is a little gem, for the flowers are hardly of average size, but they are white, very pure, full, and finely formed; with me it proves a free, hardy rose, flowering abundantly and well, both in summer and autumn.

Clotilde (Tea-scented) is good, rather too near in colour and general character to that fine old tea-scented rose Bougère, but lighter in colour. One plant produced here twenty fine blooms, variable in colour, rose, red, violet, and white mixing up without order or method; but the flowers were all of good size, opened freely, and were finely shaped.

Coquette des Alpes (H.P.) is also a pretty rose, white, shaded with carmine; it is small, but of good form. The growth is vigorous.

Comte Raimbaud (H.P.) was very beautiful, although perhaps it will scarcely satisfy those who insist on a rose being *quite* full; the flowers are dark carmine-cerise, exceedingly brilliant, of large size, and fine outline. It appears hardy, vigorous, and free.

Curé de Charentay (H.P.) is a very large dark purple rose, of good form, and vigorous growth.

Duchesse d'Aoste (H.P.) is of a bright glossy rose colour; a large nicely cupped flower, of a pretty bright colour, but becoming rather flat with age.

Elie Morel (H.P.) is especially valuable for its distinctness, but this is not its only claim to recognition; the flowers are of a delicate rosy lilac, with white edges, large and full, the growth free.

François Fontaine (H.P.) is a grand rose, large, full, and of good globular form, the colours dark reddish purple, illumined with scarlet. The growth is vigorous.

Impératrice Charlotte (H.P.) bloomed well here, both in and out of doors. The flowers are clear pale rose, often with bright centres, large, full, and well shaped. It appears to be free and good.

Jean Pernet (Tea-scented) was not so good here as I had seen it with the raiser in the South of France the year before; still it is promising. The flowers are bright yellow, becoming slightly paler, but very clear after expansion, large, full, and freely produced; growth, vigorous.

La France (H.P.) is quite a new style of flower, and will, I believe, become very popular as a garden rose. The shape of this rose is not at all regular, as the outer petals are often fantastically twisted and curled. It is, however, good enough and great enough to stand without conforming to the rules of conventional rose life. The flowers are bright lilac, with rosy centres, often overlaid with a beautiful shade of silvery white. The petals and flowers are large, and the plant, which is apparently of free growth, produces an abundance of flowers in quick succession.

Madame Chirard (H.P) is a beautiful bright rose-coloured flower of fine form, large, and full, and in my judgment the best rose-coloured flower of the year, as I have hitherto seen it better than "Alice Dureau."

Madame la Baronne de Rothschild (H.P.) is a first-class novelty, as many will remember who may have seen the plant and flowers exhibited by me at Kensington last spring. I saw this rose with the raiser in the summer of last year, and marked it the best seedling of the year; it has bloomed freely here since then, and quite supports that character. The flowers are very large, almost full, of a beautiful pale pink or rose colour, shaded with white; the habit is good, and the growth vigorous.

Madame Marie Cirodde (H.P.) is another novelty of undoubted merit. The flowers are pink, or rose, clear in colour, well imbricated, large, and full. The growth is vigorous.

Madame Noman (H.P.) is a beautiful pure white rose, not large, but of exquisite form and full. It blooms freely, too freely, indeed, for the plants here were exhausted by the quantity of flowers produced. This and "Boule de Neige," two white roses sent out last year by rival establishments at Lyons, are both creditable to the raisers. Madame Nomam pleases me best as a flower, but Boule de Neige is of hardier constitution, and will, I think, make a better garden rose.

Merveille d'Anjou (H.P.) is a very large, full rose, the colour fine bright, deep, purplish crimson. I find it marked in my note-book as "a crimson Baronne Prevost." The form is expanded, reflexing sometimes as the flower ages; the growth is vigorous.

Pitord (H.P.) is a pretty enough fiery-red flower, of good form; very velvety, something in the way of Le Rhône; the flowers of average size, and full; the growth vigorous.

President Willermoz (H.P.) will please all who do not insist on a rose being quite full; the colour is bright rose; and the flowers are large and very beautifully cupped. The growth is vigorous.

Prince Humbert (H.P) is a dark rose, in the way of Black Prince. I have a doubt, however, whether it will surpass that fine variety. I saw it at the Paris Exhibition last year, and in Margottin's nurseries both last year and this. There it was fine, but Margottin's roses are usually finer with him than ever seen afterwards. The colour is bright velvety-violet red; the flowers are of good size and full, usually produced in clusters.

Reine de Portugal (Tea-scented) is a deep, bright yellow, sometimes shaded with rose and copper. Although this variety has received a first-class certificate in England, yet from what I have seen of it both at home and abroad, I have much doubt of its merit. With me it has been all through of irregular form, and seldom opens well.

Souvenir d'Adrien Bahivet (H.P.) seems to be a good hardy rose of free habit; the colour is reddish crimson, shaded with purple; the flowers are large and full; the form globular and fine

Souvenir de Caillat (H.P.) was very good here last spring; the flowers are violet, purple and scarlet; of large size, full, and produced in clusters. The raiser states that it is superior to Lord Clyde, a variety raised by me in 1859, but of this we require further proof, good as it undoubtedly is.

Souvenir de François Ponsard (H.P.) is a bright, rose-coloured flower of globular form, large, full, and very sweet; the petals are large, smooth, and well rounded; the growth is vigorous.

Souvenir de Pierre Vibert (P. Moss) is a great acquisition among perpetual moss roses; the flowers are dark red, shaded with blackish carmine, large, full, and of good form, not unlike the old French rose Boula de Nanteuil.

Souvenir de Ponsard (H.P.) is a rose-coloured flower, flamed with scarlet, large, full, and of vigorous habit; it flowers freely.

Sophie de la Villeboisnet (H.P.) is also a rose-coloured flower, frosted with silver; it is of good form, large and full, and flowers freely; the growth is vigorous.

Vicomtesse de Vesin (H.P.) is a beautiful bright red, of fine form, large and full. This promises to be a free, hardy rose of first-rate quality.

The above are my favourites of 1867. The following also flowered here:—Baroness de Beauverger, Charles Turner, Christine Nilsson, Clotilde Rolland, Comtesse de Falloux, Madame Barriot, Madame Louisa Seydoux, Madame Rolland, Mademoiselle Elise Chabrier, Monsieur Barillet Deschamps, and Souvenir de Madame Corval. They are pretty enough roses, but are not in my judgment equal to the first list.

Paul's Nurseries, Waltham Cross, N. WILLIAM PAUL.

THE QUALITY OF MELONS.

IT is rather a curious fact that at a great many of our Provincial Fruit Exhibitions we should meet with Melons which are very inferior in quality. Why it is so may appear to be a mystery; but no matter whether we travel east or west, south or north, the same condition presents itself. We might have expected that during the past summer there would have been some amendment, as it has been one of the best adapted for Melon culture that we have for many years experienced, and yet withal I have seen no improvement. I make this statement upon a somewhat extensive survey, for, when acting in the capacity of a juror, I have had to decide on the merits of not less than from twenty-five to thirty at a time, but among the whole I have seldom found more than two or three the flavour of which was even tolerable; very often they proved inferior to the thick-skinned, hard-fleshed, insipid Cantaloups so generally grown forty years ago.

From what has been stated it is not to be inferred that a high standard of quality is rare among Melons, for by perseverance and the aid of fertilization with the Kashmirs, the Cassabars, and other kinds, we have secured a progeny which in some cases possess so exquisite a flavour as to lead us to suppose that nothing more is required. Breeding between so many near relations has, however, been going on so rapidly of late, as to have brought on debility of constitution, so that many of the best varieties have scarcely strength enough to ripen a crop. Are we driven, then, to the conclusion that the deficiency of quality of which I complain, is owing to the want of ability in this particular branch of horticulture? Such an impeachment would be exceedingly unjust; and were I to attempt to support any such statement, I should have all the blue aprons in the kingdom rising against me.

Damaged foliage from whatever cause, an excess of water at the roots, and a too moist atmosphere after the fruit begins to ripen, are, I fear, the proximate causes that produce deficiency in flavour. The loss of even one principal leaf diminishes the elaborating power of the plants, so that the material out of which flavour is formed is greatly reduced. The secondary leaves—those that constantly appear on succeeding shoots—are of less consequence, and the further they are removed from the primary ones, the less important do they become. But this is a subject that I must not discuss at present.

The Gardens, Tortworth Court. ALEXANDER CRAMB.

SEASONABLE HINTS FOR AMATEURS.—JANUARY.

UNDER this head I intend to give such brief practical directions as may be useful to that large class of amateurs who possess a small garden, and who, with the occasional assistance of a man or boy, manage it themselves. My remarks will not include all the details of a general calendar, but will be confined to "Seasonable Hints."

If the weather be open and mild, as it sometimes is in January, the amateur may find much out-door work to do. If he loves flowers, as he is sure to do, and particularly the Queen of flowers, the Rose, he may increase his stock of plants by putting in cuttings now; the autumn is a preferable season, but cuttings of the last year's wood from five to six inches long, put in now, oftentimes do very well. They should be planted in rows one foot apart, and the cuttings should be three or four inches apart in the rows. The soil should be pressed firmly about the cuttings with the foot, and should a mild spring follow, a large per-centage of them will grow, and make good plants of the best description, being on their own roots. Some kinds strike freely in this way, such as the Gloire de Dijon; and here I would recommend those amateurs who love Roses, and wish to have a succession of beautiful flowers for many months, to plant this sort largely. It does well any way—worked on the briar as a standard, or on its own roots as a bush, either trained up a pillar, or, better still, planted and trained against a south wall. A plant of this rose against my cottage has at the present time (December 14) upwards of one hundred blooms more or less expanded, and should mild weather continue so long, I shall be able to cut a number of splendid blooms for Christmas Day from this one plant, from which I have been cutting blooms regularly since April last. Souvenir d'un Ami is another beautiful, free-blooming, Tea-scented Rose. The Hybrid Perpetuals are a splendid class of Roses, and masses of them furnish a succession of deliciously fragrant flowers from early summer to mid-winter. Briars and Manetti Stocks for working next season should be panted; Roses may also be planted, as well as hardy trees and shrubs of all kinds.

Tender plants under glass will now require a good deal of attention. Inexperienced amateurs oftem make great mistakes at this season through improper watering, and "coddling" their plants so as to excite them into weakly growth. No instructions are equal to a little experience in these matters.

To keep plants healthy, they should remain in a state of rest as much as possible during this month, giving no more fire-heat than is sufficient to keep out the frost, giving an abundance of air whenever the state of the weather permits, and watering only when they require it, but then giving sufficient to moisten the whole of the soil in the pot. Bedding plants kept during the winter in pits or frames will need very little water; they should be frequently looked over, and have all the decaying leaves picked off; they should have plenty of air at all favourable opportunities, and should be well covered up at night.

In the Vegetable department there is nothing very urgent to be attended to at present, besides making a sowing of Early Peas and Beans; but in the Fruit department a great deal may be done if the weather is mild. The pruning of fruit trees should be forwarded as much as possible, and fruit trees of all kinds may be planted, though I prefer the autumn season for this latter operation.

As amateurs are often at a loss what varieties of fruit to plant, I will mention a few which, if the soil and situation are at all favourable, will give satisfaction:—KITCHEN APPLES: Lord Suffield, Large Cockpit, Dumelow's Seedling: where there is only room to plant three trees, I strongly recommend these sorts, as they grow freely, and bear most abundantly, seldom failing if the trees are properly managed. The Lord Suffield is one of the earliest kitchen apples, and continues good till November; then the Cockpit is in fine condition until February, and Dumelow's Seedling is good late into June. If there be room for six trees, I would plant two of each of the above-named sorts; and if there be room for more, then any or all of the following may be added:—Rymer, Wormsley Pippin, Warner's Pippin, Blenheim Pippin, Alexander, Brabant Bellefleur, Bedfordshire Foundling.—Table Apples: Kerry Pippin, King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Golden Reinette, Scarlet Nonpareil. If there be space for more, any of the following may be added:—Yellow Ingestrie, Aromatic Russet, Margil, Court of Wick, Court-Pendu-Plat, Reinette du Canada.—Pears: Williams' Bonchrétien, Dunmore, Beurré Clairgeau, Beurré Diel, Beurré d'Aremberg, Beurré Bosc, Louise Bonne of Jersey, Easter Beurré, Marie Louise.—Plums: Rivers' Early Prolific, Mitchelson's, Orleans, Victoria, Pond's Seedling, Jefferson.—Cherries: May Duke, Late Duke, Black Heart, Black Eagle, Elton, Bigarreau.—Gooseberries: Whitesmith, Red Warrington.—Currants: Red Dutch, Raby Castle, White Dutch, Black Naples.—Raspberries: Red Antwerp, Fastolf, Beehive.—Strawberries: Keens' Seedling, Princess Alice Maude, Dr. Hogg, President, British Queen, Eleanor, Elton.

The amateur will not err in planting some or all of the above-named fruits, if the soil and the situation of the garden be favourable. Most of them are old sorts, but if they have not the charm of novelty to recommend them, they have the good qualities of being free growers, and most abundant bearers.

Stourton. M. Saul.

SOME VARIETIES OF THE STOCK.

THAT old-fashioned yet thoroughly popular flower, the Stock, has been well termed a "domestic flower," in that it has strong home associations, for every small garden contains its Gilliflowers. Many cottagers make a pet of the Brompton Stock, and work into very fine strains of it, for this very petting of the flower is certain to become the means of its improvement. The Ten-weeks is another class of Stocks that find favour with the amateur gardener, and during the summer months many an allotment garden round London, as well as in the suburbs of our large provincial cities and towns, are gay with them,—fine double flowers, with a superb beauty and exquisite finish, produced by the intelligent and persistent attention bestowed upon them.

A great portion of the Stock seed sown in this country comes from the Continent, but not all, for there is much saved in England, and round London some very fine strains of Brompton, Ten-weeks, and Intermediate Stocks are saved in large quantities. Most of the Intermediate Stock seed that finds its way into the market is of home growth, and the same may be said of the Brompton Stocks. The collections of each come from the Continent.

A few years ago I met with two splendid strains of Stocks in cultivation in England, wholly of English origin, the seed being saved annually by the grower. They were termed Giant Ten Weeks and Pyramidal Ten Weeks, the latter being of dwarfer growth, but of a more pyramidal habit. Of the former there were two colours, purple and scarlet; the individual blooms were of great size, and fully double, and the spikes were of enormous size, and, when well grown, from fifteen to eighteen inches in length. They had a nice branching habit, and yielded a continuance of bloom. The purple hue was something very fine indeed, and they were richly fragrant. A long experience of Continental-raised Stocks has never revealed to me anything so fine as these Giant Ten Weeks, especially for exhibition purposes.

Not less attractive or useful are the Pyramidals. Of these there are three distinct colours, viz., scarlet, violet, and azure blue, the latter being the nearest approach to a blue Stock I have ever seen. Many persons to whom I have sent seeds of this variety, and who have grown it, concur in praising highly its beautiful hue of colour. No strain of German Stocks that I have ever seen is more continuous in blooming than these English Pyramidals; they yield a great succession of side-shoots that supply flowers till frost or damp destroys the plants.

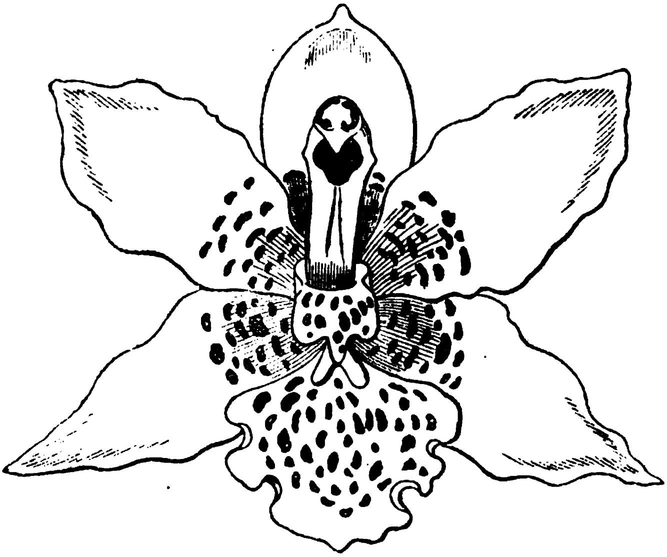
There is yet one other good feature about these Stocks, and that is the large per-centage of double flowers the seed produces. It is often urged against English-saved Stocks that they do not produce a sufficient quantity of double flowers. In respect to those under notice, the objection fails in both instances, and those of the readers of THE FLORIST AND POMOLOGIST who cultivate Stocks should endeavour by all means to secure some seed of these very fine and striking English strains.

QUO.

ODONTOGLOSSUM NEBULOSUM.

THE culture of this fine species is only beginning to be understood. Time was when the few plants that existed in collections in this country were lean, wrinkled, and in every way ill-favoured. The pseudobulbs showed an immaturity betokening constitutional weakness, totally incapacitating the plants for throwing up an inflorescence of a characteristic kind. When to this is added, that an indifferent and incorrect mode of cultivation superinduced an evanescent flowering season, the only consolations remaining for those who may have purchased the plants at high prices, were the rarity of the prize, and the future hope of being able to improve its condition.

Times alter; and in the general onward march, orchid culture, in not a few instances, can count several steps upwards. In the case of this, as of most other Odontoglots, the success may be mainly attributed to the cool cultural system; but with this must be ranked the quantities that have been introduced in modern times, and the consequent greater inducement to undertake a series of contrasting experiments. I had always an idea that moderately cool treatment was the principal point in any calendar of operations, but it is only recently that I have been converted to the notion that greenhouse treatment is decidedly and absolutely the best for Odontoglossum nebulosum. I was tardy in believing Mr. Stuart Low when he wrote to me that his collector found quantities of this plant covered with hoar frost, but I resolved that it was a wrinkle worthy of noting and experimenting upon. We have dozens of the plant at Meadow Bank growing as cool as possible in summer, and very nearly so in winter, for the thermometer at the minimum has actually during this and last season been so low as 33° Fahr., so that if the hoar frost has not actually reached them, it was hovering in what I should once have considered very dangerous proximity to them. As to their present condition, we have nothing healthier in the place, and they are prolific of successional racemes, yielding from three to eight flowers, according to the kind, or to the vigour of the various specimens. I think I have promulgated in the *Gardeners' Chronicle*, in some of my papers on Orchid Culture, and which at spare moments I intend to continue, that the foliage of Odontoglossum nebulosum was yellowish green, and that it could never be cultivated otherwise. It is a decided mistake, a wrong averment; for we have them—not quite as green as the Scotch leek, but quite as much so as any of the family. Cool treatment has induced this, and has brought such a constitutional vigour as I little dreamed of, and which, if I had seen in any establishment two years ago, would have tickled my fancy, and caused my eyes to twinkle, quite as much as the sight of them did those of Mr. James Veitch, judging from his physiognomy, and noting his exclamation. So much for cool treatment, and its healthful influences.



The varieties are now numerous, the engraving being an excellent representation of what might be called the type. The spotting is confined to the base of the sepals and petals, and extends over the greater portion of the labellum. There are some having pure white sepals and petals and a chocolate-spotted lip on a white ground, such as was once exhibited by Mr. Day at the Royal Horticultural, and which merits an additional designation to its specific name. It might very appropriately be known as var. *Dayanum.* Unquestionably the most beautiful that has come under my notice is in the choice collection of the Messrs. Veitch. It is spotted regularly over sepals, petals, and labellum, and adds to this charm a very desirable outline, such as a florist would, with all his heart, recommend. I have described this variety in the *Farmer* under the name of var. *pardinum.* These are the three types of O. nebulosum, all of them very beautiful, and now that they are come-at-able at a reasonable price, they should be bought by every grower. Nothing we have, but the species in question, unless it be O. Pescatorei, can withstand the cold and revel in it. It will live in an atmosphere that would kill O. Alexandræ and its allies, and even the plethoric and robust-looking O. grande. Amateurs may safely grow this in their little greenhouses, and by all means should give it a good supply of water; they should grow it among two-parts fibry peat and one-part sphagnum, with a good sprinkling of silver sand, crocking the pots moderately.

Meadow Bank. JAMES ANDERSON.

VIOLA CORNUTA.

OF this beautiful Viola I have had two long rows in great beauty during the whole summer, and they remained so up to the middle of September. On the terrace, a combination of this and Beaton's Variegated Pelargonium continued in perfection until late in October. Last year I witnessed it very fine at Huntroyde, in October, quite equal, as to profusion of blossom, to its appearance in spring. It has also been blossoming very finely during the past autumn at Thoresby.

Osberton. E. BENNETT.

ORCHARD-HOUSE TREES IN POTS.

CIRCUMSTANCES, and not inclination, made me a cultivator of Orchard-house Trees in pots. My preference would have been for trees planted out in the border of the house, whether that were a span-roof, a half-span, or lean-to; and for the early forcing of Peaches and Nectarines, I still think the best house is a lean-to, having the trees fan-trained, planted near the front wall, and trained to wires fixed horizontally about 15in. from the glass. My experience, though extensive, does not extend to forcing trees grown in pots; so that I cannot say whether pot-trees would do for very early work. When my employer wished for an Orchard-house, and for trees grown in pots, I determined, though doubtful as to the result, to manage them to the best of my ability, all the time wishing I could have had them planted out in the borders; but I have now changed my opinion, and I would rather dispense with any of the other houses than with the Orchard-house.

I grow between thirty and forty varieties of Peaches and Nectarines, and I find both amusement and employment amongst them, from the time the flowers expand in the spring, until the fruit is gathered in the autumn. I have grown fruit in this way—Peaches, Nectarines, Plums, Pears, and Apples—of better quality and larger than by any other means; for instance, an Early Murrey Nectarine had, for its size, a good crop of fruit, which weighed, on an average, 5oz., and measured 8in. in circumference; two Walburton Admirable Peaches weighed 19oz.; a Royal George Peach-tree in a 13in. pot carried 30 fruit, the united weight of which was 10lb. 6oz.; a Bellegarde in the same sized pot had 29 fruit, which weighed 10lb. 13½oz.; and I have had the Salway Peach 10½in. in circumference. Of Pears, I have had two fruit of Beurré Diel which weighed 36½oz.; of General Todtleben, which was turned out of doors to ripen, one fruit weighed 18oz. Williams' Bonchrétien and Louise Bonne of Jersey are also excellent Pears from pot-trees. Plums are very fine grown in this way; and Apples, which will not bear fruit until the trees are large in our light soil, at two years old, bear abundantly in pots. It will, therefore, be seen that Orchard-house Trees in pots may be cultivated with an eye to profit as well as pleasure; and a continued supply of the best fruit may be obtained in this way. I know that practical gardeners are slow to admit the truth of this. Thus, in a weekly contemporary, "F.," writing of Shrubland Park, says: "Mr. Blair's estimate is that of most practical men: pot plants are most useful to fill up with, but I would not like to depend on them for the supply of a family." I depend on them entirely; and in a house 54ft. by 24ft. I manage to grow over fifty varieties of fruit trees in pots; so that there are two sides to this question. Not the least advantage to be derived from the system, is the facility with which an inferior sort may be removed, and a better variety substituted, or a good new one introduced; and there is always a great amount of interest in watching the development of new varieties of fruit.

The form of house which I prefer is the span-roofed, and it ought to be wide enough to contain three rows of trees down the centre, and one row all round the sides. The path should be at least 3ft. wide. Shelves may also be fixed all round, near the bottom of the rafters, and these may be filled with Strawberries, which will just go out of bearing as the out-door crops come in. The Orchard-house here is 54ft. by 24ft., the sides 6ft. high, partly of glass and partly of wooden shutters, fixed on centres, and moved all at once by a rod and lever, which latter moves in a quadrant at the middle of the long rod. The fixing of this rod is rather expensive at first, but it soon pays for itself. The top lights are also opened by a rod and chain, and open all at once in the same manner. Three pillars on each side support the roof; one pot-vine is taken up each, and trained to arch over the Peaches and Nectarines, and from these pot-vines I have cut bunches of Black Hamburgh grapes weighing 2lb. each. To an ardent lover of fruit culture such a house is always full of interest.

I may add that I cultivate two rows of Strawberries on the shelves previously alluded to, and I generally commence to gather fruit from them after the middle of May. I could have the fruit earlier by growing Black Prince or some such early variety; but we have early strawberries in the forcing-house, and do not therefore grow very early sorts in this house, only the most approved.

A house such as this, with high sides, is not adapted for small trees; we have therefore erected a lean-to 38ft. by 6ft., which gives space for one row of young trees in front, while it allows of bearing trees being trained to the back wall. The young trees are principally "maidens," which are lifted in autumn from the open ground, and potted for the most part in 10in. pots. These bear a crop of fruit the next season, and then replace a few of the oldest and least useful of the trees, which I throw away each year.

Loxford Hall, Ilford. J. DOUGLAS.

NOVELTIES, ETC., AT FLOWER SHOWS.

MOST interesting and highly valuable as winter decorative plants are the *Hybrid Solanums*, of which fine groups were staged at the meeting of the Floral Committee on December 15th by Mr. Weatherill, of Finchley, and Mr. B. S. Williams, of Holloway, to each of whom a special certificate was awarded. These new forms originated with Mr. Weatherill, and were the result of a most successful cross between S. Capsicastrum hybridum and S. Pseudo-Capsicum. With a dwarf habit, they combine the vigorous growth of the latter, and produce such a profusion of highly-coloured fruit as to become most valuable for the purpose of winter decoration. They grow from 18in. to 24in. in height in the first season, and have a dense compact freely-branched habit of growth. The leaves vary in breadth and length, and the form and size of the fruits also differ, some being quite round, others oval or olive-shaped, while others again are intermediate. Some plants produce the fruits in clusters of from four or five to seven or eight, which much enhances their decorative value. Though the different varieties may not be reproduced true from seed, there is such a general similarity, that seedling plants are certain to be quite worthy of cultivation; and, like the parents, the distinct forms may be increased by cuttings. The vigour of these plants suggests that they might probably be grown as small standards, resembling miniature orange trees, as is sometimes done with S. Pseudo-Capsicum. Mr. Peel, of Cambridge House Gardens, Twickenham, grows remarkably fine samples of these standard Solanums, and it would be of interest to have his method of culture explained. On the principle that we should yield honour where honour is due, it should be stated that Mr. P. M'Arthur, of the Edgeware Road, was the successful operator in obtaining the first break from the older forms; but, failing to continue the work, it has been carried to such a successful issue by other hands.

A first-class certificate was awarded at this meeting to a magnificent single-flowered form of Chinese Primrose, named *Wonderful*, also shown by Mr. Weatherill.

The individual flowers were of great size, and of massive proportions, some of the pips having measured fully 2¼in. in diameter, the colour white, edged and tinted with rose, finely fringed, and set off by a large showy yellow centre. If this fine variety can be perpetuated by seed, it will become very popular. In a box of cut *Camellias* sent to this meeting by Mr. Allen, gardener to Captain Glegg, of Withington Hall, Cheshire, was a fine form of *C. imbricata variegata*, the flowers being handsomely and evenly blotched with white; also grand blooms of *Marchioness of Exeter*, a large and striking rosy salmon flower. R. D.

INSECTS INJURIOUS TO PEARS.

THERE are two Insects which cause much destruction to the fruit and foliage of Pear Trees, namely, the Pear-Tree Oyster Scale (*Aspidiotus ostreæformis*) and the Pear-Tree Saw Fly (*Selandria æthiops*). They are amongst the worst enemies with which the Gardener has to contend. The Scale attaches itself in the first instance to the bark, and afterwards as the young fruit progresses it fastens itself upon it, and piercing the tender skin, appears to feed upon the juices, causing the more tender-skinned varieties to develop a number of knobby, misshapen protuberances, which render the fruit utterly worthless. There are very few varieties which are thick-skinned enough to resist these attacks. There are, however, a few which appear to suffer comparatively little in the fruit, although the Scale may abound on the wood. The Easter Beurré may be quoted as an example, and I find that it and thick-skinned Pears of that class are often exempt from attack, when the thinner-skinned varieties, such as Marie Louise, Zéphirin Grégoire, Beurré Clairgeau, and such like kinds, although the several sorts may be growing on the same tree, are liable to be rendered both unsightly and uneatable.

The grub of the Saw Fly, on the other hand, feeds on the surface of the foliage, which is thus checked in its functions at a very critical period of the growth of the fruit. We all know that without healthy foliage there cannot be healthy fruit; whatever, therefore, interferes with the action of the one reacts upon the other; and just when the fruit is swelling off, this very destructive slimy grub commences to destroy the foliage, and many a fair promise is thus as it were nipped in the bud, and the power of producing a perfect development destroyed. I believe the best remedy for this pest to be hand-picking at the time when the grubs become large enough to render their ravages apparent. This generally happens early in July, and continues through that and the two following months. In October they spin their little cocoons and become pupæ; and, therefore, in order to reduce hand-picking to a minimum, the foliage should all be collected and burnt at the fall of the leaf, and the surface soil around the base of the trees should be frequently stirred about, particularly during dry frosty weather in the winter. After pruning and nailing in, the trees should be dressed, as I will presently advise, for the Scale, and the same remedy will act as a corrective of the Saw Fly, but not a cure, because the pupæ may be hatched in other parts of the garden, and the fly will find its way to the foliage of the dressed trees.

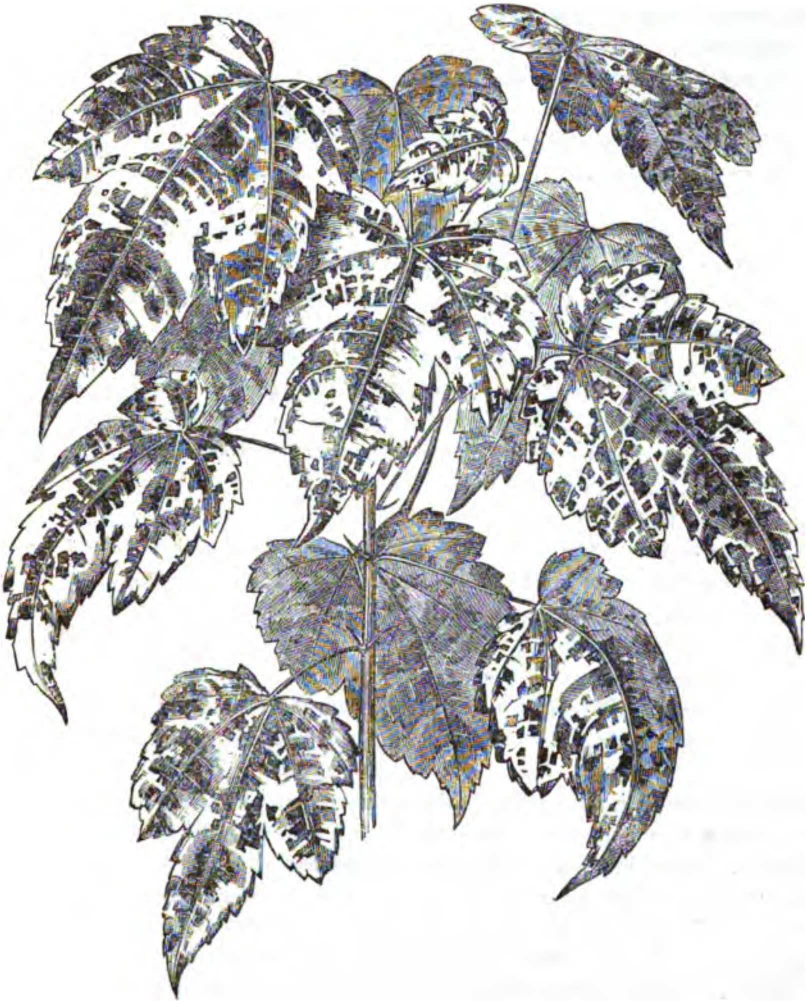
The dressing alluded to was applied by me to some Pear Trees two years ago, by way of experiment, and attended with such good results in this individual case, that I thought it would be well if it were more generally acted upon. It is no new idea; only an old one slightly modified and carefully carried out. The occasion was this. Many of my Peach Trees were badly infested with red spider and mildew in 1866, and early in the spring of 1867 I dissolved 10lb. of Gishurst Compound in boiling water and put it into a large tub; to this was added about 30 gallons of water, and this was all brought to the consistency of very thick paint by the admixture of about equal proportions of soot, lime, and blue clay finely tempered, all of which were passed through an eighth of an inch sieve, to keep back any coarse granular substances. The whole, when mixed well together, dried of a fine neutral tint not at all displeasing to the eye. I found that to paint over the branches of the Peach Trees one by one would take up more time than I had at command. I therefore determined to proceed in a much more summary manner, and waited until the trees were nailed in to the wall, when, with a long-haired whitewash brush, we proceeded to paint over both the wall and the branches as thickly as the mixture could be got to lay on. As there was no pulling the branches about afterwards, we were able to lay it on very thick, and it stuck fast too.

When the Peaches were done there, was a good quantity of the dressing left; this I proceeded to apply in the same wholesale manner to some infested Pear Trees, from which, for a few previous years, not 5 per cent. of the fruit was fit to send to table. The results in both cases quite satisfied me of the efficacy of such a dressing. The Peaches were entirely free from both red spider and mildew, and the foliage being healthy, they ripened a good crop of fine fruit. The Pears also were very much improved as to their health and appearance, and the fruit came clear-skinned, and the greater proportion useful. The present season (1868) I contented myself with a good syringing with Gishurst Compound of about 6oz. to the gallon, and the good effects were well sustained. In the Pears especially there was a large crop of fair-sized, good fruit.

Redleaf. JOHN COX.

ABUTILON THOMPSONI.

INTRODUCED from Jamaica—such is Messrs. Veitch's brief statement of the history of this very ornamental plant, which is evidently a sport from Abutilon striatum, a species inhabiting the mountains of Brazil, but now naturalized in Jamaica. Like its parent, it has been held in some disrepute from its true character not being at first understood. Abutilon striatum itself, when introduced, was grown in the stove, and soon became set down as a weedy spindly plant, notwithstanding its pretty flowers, but when grown in a greenhouse its sturdy hardy and ornamental aspect reversed this unfavourable verdict. It is indeed recorded that at Clapham it has survived in the open air in winter, uninjured. Similar misconception prevailed in respect to Abutilon Thompsoni, the utility of which was not even suspected till it was planted out in the open garden for the summer, as an experiment, Here, instead of the dingy, blotched leaves which had been generally seen under house culture, and which failed to procure it many admirers, it became quite brilliant in its mottled livery of green and gold and white, so much so that it must be pronounced a first-rate



Bess Pool Apple, grown by J. Hames, Esq., of Leicester. A sample of smaller fruit was the produce of scions grafted on the Crab Stock; while a sample of larger and much finer fruit was grown from scions of the former tree, again grafted on the Pearmain. Mr. Cox, of Redleaf, has fruited the Winter Nelis Pear from scions grafted on the Chaumontel. The fruit was thereby enlarged, and while in some the fine buttery texture was supplanted by the gritty texture of the Chaumontel, in others on the same tree both flavour and texture were unaffected.

—— The Warming of Small Greenhouses and Conservatories attached to villa residences is often found difficult, but Mr. Trotman, of Isleworth, has had in use for some years a gas stove, which is quite successful. It consists of a cylinder of zinc, the outer portion of which forms a boiler, to which flow and return pipes can easily be fitted, while the centre is hollow, and serves to convey the heat from a ring of gas jets placed at the base. The foul air is carried off by a pipe which serves to diffuse heat through the house. It is both inexpensive and convenient.

—— Fowler's Insecticide is an effectual remedy against many of the insect pests of plants. Used at the strength recommended by the makers—namely, four ounces to the gallon—it effectually destroys white and brown scale, thrips, red spider, and the green and black fly. It does not injure the plants.

Obituary.

—— Dr. Carl Friedrich Philipp von Martius died at Munich on the 13th ult., at the age of 75. He was born at Erlangen, and, after studying in the university of that city, travelled for some years in Brazil, the botany of which country he has richly illustrated in his *Genera et Species Palmarum*, *Nova Genera et Species Plantarum*, *Icones Plantarum Cryptogamicarum*, &c. He has long held the post of Director of the Botanic Garden, and Professor of Botany in the University of Munich.

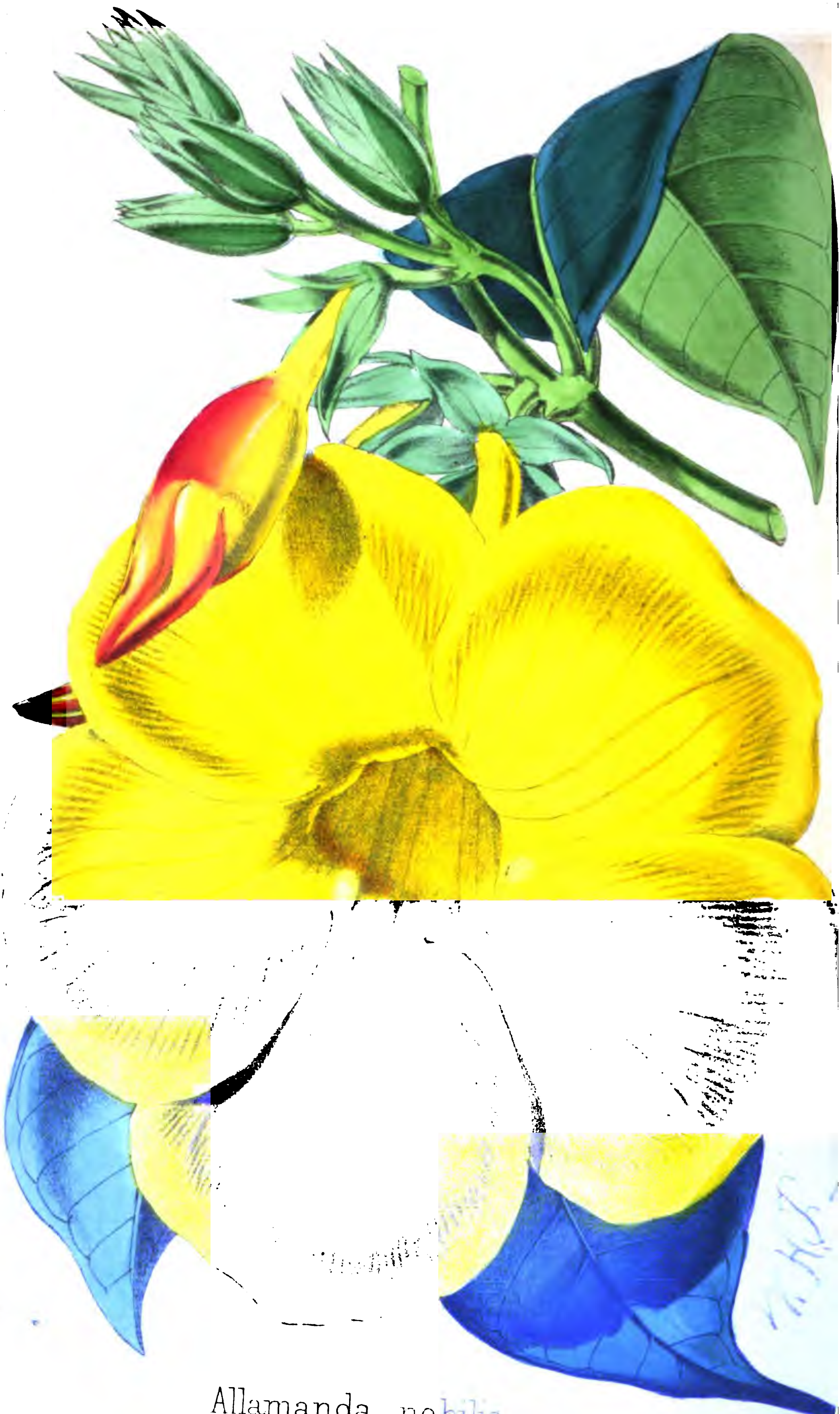
—— Dr. Edward Poeppig, who travelled in Chili, Peru, the Amazon country, &c., from 1827 to 1833, and who, in conjunction with Endlicher, published the botanical results of his journey in the *Nova Genera et Species Plantarum quas in regno Chilensi, Peruviano*, &c.,—a valuable work, illustrated with 300 plates of new plants,—died on the 4th ult. He was born at Plauen, July 16, 1798, and was consequently in his 71st year.

—— Dr. Schnizlein, Professor of Botany, and Director of the Botanic Garden at Erlangen, died on the 24th of October last. He was well known to botanists by his valuable illustrations of the natural families of plants published under the title of *Iconographia Familiarum Naturalium regni vegetabilis*.

—— Dr. Ecklon, whose name is familiar to all botanists, from the rich collections of Cape plants sent by him to Europe, either alone or in conjunction with M. Zeyher, has recently died at Cape Town, in his 73rd year. He was born at Apenrade, in the Duchy of Schleswig, December 17, 1795.

—— Mr. John Waterer, nurseryman, of Bagshot, died on the 2nd of November last, at the age of 85. For the last 20 years Mr. Waterer has contributed the annual display of Rhododendrons to the Royal Botanic Society.

—— Mr. William Drummond, the senior partner in the well-known firm of Drummond and Son, seedsmen, has recently died at Stirling. He was born in 1793 at Bannockburn, and was consequently in his 75th year.



Allamanda nobilis.

ALLAMANDA NOBILIS.

WITH AN ILLUSTRATION.

OF the species of Allamanda, which rank amongst the most gorgeous of stove-climbers, that which we now figure is certainly one of the finest—the noblest of all those yet known in respect to its individual flowers, and so far as experience has gone, the equal of the very best of its congeners in respect to prolificacy of blossom. It was introduced by Mr. W. Bull, of Chelsea, from the Rio Branco, in Brazil, and flowered for the first time in this country in the autumn of 1867. The flowers are of a pure bright yellow, rather deeper tinted in the throat, but without streaks or any other markings; they measure from four to five inches across, and have a decided aromatic magnolia-like perfume; they are, moreover, of a full circular outline, quite different from that of the other cultivated species, with the exception of A. grandiflora, from which the plant differs in its scandent habit of growth. These features, together with the membranous hairy leaves, the pubescent calyx, and pubescent exterior surface of the corolla, and, moreover, the dissimilar shape of the latter, mark it as distinct.

Our figure was prepared in July last from a plant which bloomed in the nursery of the Messrs. Glendinning and Sons, of Chiswick, from whom we learn that the plant in question, though it bore no fewer than twelve trusses, each truss showing from ten to sixteen flowers, had only been grafted about four months previous. This one fact is of itself sufficient to indicate its free-flowering qualities, while of its size, form, and beautiful colour, a very accurate estimate may be formed from Mr. Fitch's excellent sketch, limited though it be by the size of our page.

M.

THE NEW PLANTS OF THE PAST SEASON.

ANNO DOMINI 1868, though it may not be credited with such startling novelties as some of its predecessors have been, will yet occupy no mean position in the annals of Horticulture, in respect either to the number or the quality of the New Plants it has ushered into our gardens. This proposition we shall now endeavour to support by a very brief reference to some of the most remarkable of the plants themselves.

We first call up the group of hardy trees, shrubs, and woody climbers, and among them we find some choice acquisitions. First and foremost comes a golden Oak, called Quercus Robur Concordia, which is much more brilliantly coloured than the var. called aurea, previously known, the sinuate leaves being of a rich golden tint; this novelty has turned up in the Belgian nurseries. A fine contrast to it is supplied by the Acer platanoides rubrum, grown in Russia and Germany, and whose broad palmatisected leaves are of a deep blood-red colour. The evergreen Retinospora filicoides is a graceful hardy shrub from Japan, remarkable for the fern-like character of its ramifications; while the Tamarix plumosa is a deciduous bush, so extremely ramified and feather-like in its spray as to have acquired, in the French gardens, the epithet of *Marabout*. Of hardy creepers, adapted for covering walls and buildings, we have the Chinese Ampelopsis dissecta, and the Japanese Ampelopsis tricuspidata, *alias* Veitchii, both of slender but rapid growth, the former with palmatisected leaves, having pinnatifid segments, the latter with the leaves simple or three-lobed, the leaves changing to a deep red towards autumn. Ampelopsis japonica has broader leaves, which assume in dying a brilliant, rich orange-red tint. Vitis heterophylla humulifolia, a deciduous Japanese plant, has three-lobed or five-lobed leaves, and its insignificant flowers are succeeded by cymose clusters of pretty pale blue berries.

Of the novelties of the hardy herbaceous class, we give precedence to Spiræa palmata, a Japan species, whose bright red stems, palmately lobed serrated leaves, and large heads of deep crimson flowers, render it grandly conspicuous. In the Transylvanian Campanula turbinata, a dwarf erect-growing species, with large, deep purple, bell-shaped blossoms; and in the remarkably floriferous Campanula isophylla, from the Apennines, with its smaller deeply-cut greyish-blue blossoms and bushy branching habit, we have two very distinct and really handsome species; while the Dorcoceras hygrometrica, a dwarf herb from Northern China, with the aspect of Ramondia, and purple flowers somewhat resembling those of violets, introduced to the French gardens, promises to be at once hardy and handsome. The Erythronium giganteum (just reintroduced) is also a plant of mark. Of hardy bulbs, Lilium Wilsoni (L. Thunbergianum pardinum of our plate), a Japanese introduction, with large orange-red gold-banded black-spotted flowers, produced in great branched umbels, may be pronounced one of the finest species yet known. New annuals are represented by Collinsia corymbosa, a Mexican plant, of dwarf growth, whose flowers bear a grey-blue upper and white lower lip; and by Leavenworthia aurea, a dwarf Texan crucifer with rosy lilac yellow-eyed flowers, which may be useful for sowing in masses.

Half-hardy flower-garden plants have received a valuable acquisition in the Gladiolus cruentus, imported from Natal, a strikingly beautiful plant, with almost regular bell-shaped bright red flowers, having peculiar white markings on the two lateral segments of the lower lip.

We have figured some of the acquisitions at the modern subtropical garden. Abutilon Thompsoni proved startlingly beautiful, with its grotesque motley markings of gold and white and green, when planted out in rich soil, and well exposed to light. Iresine Lindeni promises to eclipse the older and better known I. Herbstii, and has, moreover, this advantage, that its rich blood-red leaves are flat, and not puckered up as in that. Alternanthera amabilis promises to be the best of its family, being richly coloured with an intermixture of rose and orange tints, and of a more robust habit than those previously grown. And finally, a new hybrid Echeveria, E. glauco-metallica, secures by the union a greatly augmented size, superadded to the spathulate leaves, glaucous colour, and rosulate habit of E. glauca. We ought here to mention incidentally the beautiful new forms of golden-leaved Coleus, which, while probably adapted for outdoor summer use, are certainly grand conservatory decorative plants.

The Brazilian Passiflora cincinnata, with its curious ringletted purple flowers, is a showy, evergreen greenhouse climber, well worth growing. The variegated Cordyline Guilfoylei, and both the green and variegated forms of the narrow-leaved New Zealand Phormium Colensoi, will also be useful ornamental plants for the greenhouse; as will the new hybrid Solanums, S. Pseudo-Capsicum rigidum and S. Pseudo-Capsicum Weatherillii, to which we have previously referred.

Turning to Ferns, the Maidenhairs alone furnish novelties enough to render the year memorable. Thus, Adiantum amabile and A. decorum, both much divided in their fronds, are amongst the most elegant and graceful of their race; while A. Veitchianum, another charming Fern of a distinct type of beauty, is remarkable rather for its well-proportioned and beautifully-chiselled outline. These are all Peruvian. Cyathea Hookeri, a most interesting miniature Ceylon stove Tree Fern, is an acquisition of no mean order of merit. We have also to add two grand suffruticose Mexican Cibotiums, named C. regale and C. spectabile. Among hardy Ferns occurs the handsomest of all British forms, Polystichum angulare Pateyi, a Dorsetshire variety, best described as the analogue amongst Polystichums of Polypodium cambricum, only that from the larger size of the fronds and the multiplicity of their parts it possesses a degree of beauty which that handsome Fern fails to typify; the whole frond is a densely crowded mass of the most finely cut divisions; unfortunately it is sterile.

Orchids have yielded a few choice gems. First comes Dendrobium crystallinum, a Burmese species, bright and beautiful as D. Wardianum. Then come—each a precious acquisition in its way—Saccolabium Huttoni, with rosy-purple flowers from Java; Cœlogyne Reichenbachiana, a new and very handsome Pleione, from Moulmein, with rosy-lilac flowers, having the white fringed lip marked with bold magenta-coloured lines; Thunia Bensoniæ, a terrestrial species, from Rangoon, with large bright rosy-purple flowers; the true Vanda insignis, from Java, a lovely species, which may be known by its pinkish-lilac lip being rounded and hollowed like a scollop shell; the Peruvian Oncidium macranthum, remarkable for its large and nearly equal, leathery, tawny-yellow or clear yellow flowers; the Brazilian Oncidium Rogersii, with its immense flat yellow lip, the largest and the brightest-coloured yet known; together with Cattleya speciosissima Lowii, Lælia purpurata Nelisii, and Lælia anceps Dawsoni, all exquisite varieties of their respective species. Anæctochilus Dawsonianus, introduced from the Malay Archipelago, deserves mention as being one of the most vigorous-growing of that interesting group, and as having very handsomely marked leaves.

Stove plants are generally numerous. Almost coming within the gains of the year is the Allamanda nobilis, which we figure, a species which, if admitted, might have contended for the first place with the noble Lasiandra macrantha, from Brazil, whose rich and ample purple blossoms seem to be borne as freely in winter as in summer. Ixora amabilis and I. Dixiana, both of garden origin, and both bearing salmony-orange flowers, are decided acquisitions. Another beautiful plant is the Aphelandra nitens of New Grenada, with its polished leaves and erect spikes of vermilion flowers; while Dicentranthera macrophylla, a tropical African Acanthad, gives us long spikes of bell-shaped rosy-purple flowers. Eranthemum elegans is another acquisition, on account of its continuous-blooming spikes of white spotted-lipped flowers. Tydæa Lindeniana is a very distinct South American species, with silvery striped leaves, and short-tubed white flowers, having a yellow throat and violet-coloured stains on the lower lip. Finally, M. Van Houtte's hybrid forms of Plectopoma, remarkable for their large flowers, brilliant colours, and profuse inflorescence, are grand additions to the decorative Gesnerads.

The ornamental-leaved group of stove plants is one to which large additions are constantly being made. The most important now to be recorded are the numerous, varied, and beautiful forms of Codiæum (Croton) variegatum, sent to England from the South Sea Islands by Mr. J. G. Veitch. C. Veitchii is one of the finest. Two continental Marantas, virginalis and Baraquinii, both Brazilian, with broad leaves, marked with silvery bands, are exceedingly handsome. Among Palms, which are more fully attracting, as they deserve, the attention of gardeners, a beautiful dwarf species, from Central America, which bears the name of Geonoma Seemanni, is remarkable for its uniform, plicate, bilobed leaves, the smallest of which, an inch or two long, are exact miniatures of the much larger ones developed on the older plants.

Though we have but lightly skimmed over the surface of the treasures of 1868, it must now be evident that the annals of the year, as regards New Plants, are far from being a blank, far from being unimportant. M.

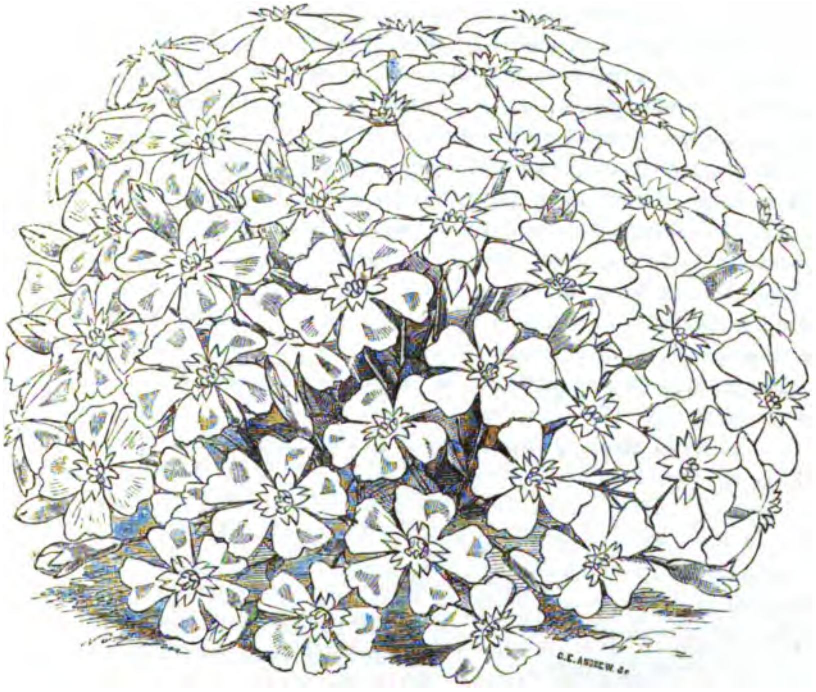
GROWING NEW GRAPES FOR SHOW.

IT has been my custom, for many years, to prove new kinds of Grapes by inarching them on established healthy vines. The wrinkle may possibly be of some use to intending exhibitors. I have found that to inarch a strong fruiting-rod on a healthy established vine, makes a wonderful difference in the size of the bunches and berries, compared with the produce of one of the same age and strength, if left to fruit in a pot. By inarching a young new vine on an old one, we get a strong fruiting-rod for next year, and if the sort turns out first-rate, by leaving a few bunches on the young rod, one may secure fine show grapes the first year it is sent out. The bunches will likewise be compact, and furnished with large berries, in consequence of their increased nutriment; and the colour will be first-rate, as it is well known that the best-coloured grapes are produced near the ventilators in the front of vineries. My object at first in inarching new vines on old ones was the sooner to prove their merits or demerits; and if they were not up to the standard, out they went. The process of inarching vines in pots on to the old-established ones, is very simple. The only important point to be observed is, to have the rod of the pot-vine in the same stage of growth as that of the old one, so as to prevent bleeding. The operation can be done with safety when they have each—that is, both stock and scion—made shoots of from two to three inches in length.

Welbeck. WILLIAM TILLERY.

LYCHNIS LAGASCÆ.

ROCK PLANTS, which are very properly engaging more and more of the attention of cultivators, will receive a choice accession in the pretty species of which Mr. Fitch has given so good a representation in the accompanying wood-cut. It is a low, glaucous, tufted, perennial herb, with densely dichotomous stems, two to four inches long, having the lower leaves linear obtuse, the upper lanceolate, and the intermediate ones ovate-lanceolate; while every ramification is terminated by a showy, rose-coloured flower, as large as, and not unlike those of, Silene pendula.


C.E. ANDREW Sc.

Dr. Hooker well observes that "this is at once one of the most beautiful and most rare of the Rock plants now under cultivation in England, its native locality being confined to a very narrow belt of the subalpine region of the

North-West Pyrenees; whilst for beauty it is difficult to conceive anything more sparkling, and at the same time delicate, than the rose-coloured, white-eyed blossoms. The tendency of the plant is to form a hemispherical mass." The generic names of Petrocoptis and Silenopsis have been applied to it. M.

ONIONS AND LEEKS FOR EXHIBITION.

THE vicinity of Manchester has of late become famous for the growth of large Onions. Last season, at Ashton-under-Lyne, several bulbs were exhibited which weighed over 2lb. each, the finest English-grown onions I ever saw. A short account of the method adopted in growing them may prove interesting to many of your readers, and may induce others to try it in localities better adapted for the purpose.

The general system is to sow the seed in pans or boxes early in February, to place them in a gentle heat, to transplant them as soon as they will permit separately into small pots, and to get them fairly established and hardened off by the latter end of April, or early in May. Previous to this, a bed is prepared to receive the young plants; it is composed of good old manure, and coarse sand and soil incorporated, and is about 18 in. deep. Into this the plants are carefully turned out of the pots, at regular intervals of 8 or 10 in. apart. Great care is taken during their growth to prevent the tops from being broken, for which purpose they are guarded by soft cords and stakes, placed at regular intervals, so as to keep every leaf in an upright position. In some instances, each plant is separately staked, the leaves being made to assume the form of a fan. The onions so treated grow to an enormous size. I lately saw six red ones, which weighed considerably over 1lb. each.

The growers are very particular in saving their own seed, and do not depend upon seedsmen for it. They easily dispose of it at 1s. per head; and such is the anxiety to obtain it, that a friend in Scotland, to whom I sent a pinch last season, wrote the other day that he would willingly pay 2s. for a quarter of an ounce,—he having grown from that sent him six onions to the weight of 9lb. In this locality, where in general we have such a humid atmosphere, it is a difficult matter to raise seed in the open air. The general method adopted is to plant in large pots in February or March, and after the heads have bloomed to place them in greenhouses or to cover with hand-glasses. During September many exhibitions take place, and a committee is appointed to go round and examine the onions before they are taken up. They are brought to the exhibition table, washed, with tops and roots on, and one man is appointed to cut the tops by rule to the length of 4½ in.; they are then transferred to the scale, and the heaviest wins, regardless of form. The Tripoli first (these are sown in August), then the Reds, and, thirdly, the Whites. The prizes in general amount to several pounds. It is interesting to watch the proceedings, the excitement being greater than is generally seen at Cottagers' Shows. Dahlias, Gladioli, Roses, &c., with specimens of Apples and Pears, are also exhibited at these shows; besides which Celery is sometimes introduced as a secondary feature, and many very creditable specimens are staged. At one show at Ashton, I saw last season three fruit of Uvedale's St. Germain Pear, which weighed 6lb. 6oz. Celery, not trimmed, reaches from 16lb. to 17lb.

Leeks are not cultivated at Ashton. The cottagers around Bolton, however, take much interest in them, and at their September shows many fine specimens are exhibited, though none so large as those shown in Scotland; nevertheless, sometimes the flag measures as much as 8 in. in width. In Scotland they are shown in threes, and have exceeded 9lb. weight. The friend previously alluded to says he has just lifted one 10 in. in circumference. Henry's Hybrid, Dobbie's Champion, Poussey's Giant, and Stenhouse's Leek, all improvements on London Flag and the Musselburgh, have each their admirers. These require to be treated in the same way as the onion, only in planting they must be put in a trench like celery, and earth must be drawn up to them as they advance. They require abundance of manure, and should know no stint of liquid during their growth; they cannot well be overdone, for they are gross feeders. The prizes offered for them are insignificant compared to those given for onions, and do not afford sufficient encouragement for the labour and expense attendant on their culture. As a vegetable the leek is not so much esteemed as the onion, yet it is a good substitute for it in many ways. Leeks are good boiled or stewed, and I have tried them fried, and consider them very good. They are esteemed as a necessary adjunct to the "kail pot," so much used in this locality. It is really astonishing to see the quantity of "pot yerbs" disposed of in Manchester market during the winter season. Those who have never tried the culture of large leeks will find it very interesting to see what can be done by a little extra labour.

Winton. JOHN WALKER.

ANTHURIUM SCHERZERIANUM.

FEW stove plants of recent introduction are more deserving than this of extensive cultivation. The inflorescence is strikingly beautiful, and remains long in perfection. I have a small plant which began to flower in July last; this has continued blooming ever since, and I cannot tell how much longer it may continue. It seems to be very easily cultivated, and most gardeners will admit this to be a great point in its favour. I grow it in a cool stove, the temperature of which ranges about 55° during the winter months, and the plant has never had any bottom-heat since it was purchased, but stands on an inverted flower-pot, which shows it off to the best advantage. The compost used for it consists of two parts turfy peat of an open sandy nature, such as Azaleas thrive in, and one part sphagnum moss, with a few pieces of broken charcoal added. In potting, the plant is kept well up, so that the compost may be raised in the form of a mound in the pot, and plenty of drainage is used. I fill the pot half full of broken crocks. As regards watering, it requires to be kept moderately moist, using rain-water which has been standing in a water-pot near the hot-water pipes, or on them if possible. The water used ought always to be warmer than the atmosphere; I use it at about 75° or 80°, but an experienced cultivator only requires to dip his finger in the water to know whether it is of the required temperature.

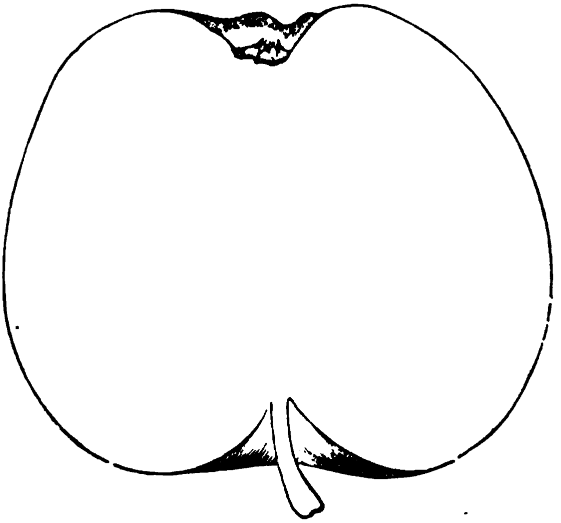
The plant has beautiful and effective dark green leaves, which can occasionally, and without difficulty, be sponged over as the best means to free it from dust. The brilliant scarlet spathes, with their curiously twisted worm-like spadices, mark it out as a species which will long be retained in cultivation.

Loxford Hall. J. DOUGLAS.

DREDGE'S FAME APPLE.

DREDGE'S Fame, an Apple which I have closely watched for the last ten or a dozen years, has proved with me such a constant and good cropper, and is possessed of so many other excellent qualities, that I do not hesitate thus prominently to recommend it.

In habit the tree has a neat, bushy, compact, tree-like appearance, when grown with a single stem. The growth is dense, and the young wood stiff, strong, and very short-jointed. The flowers are borne upon very short stalks in dense bunches, always plentifully, and generally a few days later than such sorts as Waltham Abbey Seedling, and Cox's Orange Pippin. The tree has one very distinct and commendable peculiarity, which is, that it very rarely fails to set a superabundant crop of healthy fruit, and always succeeds in "thinning out" its own crop to the required number. The fruits are uniformly large, clear-skinned, and firm, keeping well up to March.



As a cooking or culinary apple it is, I believe, generally esteemed, whilst when fully ripe, and when the clear bright streaks of crimson come out upon its broad sunny side, it makes a very noble dessert apple. The flavour is at its best brisk and aromatic, with a good supply of sugary juice. Its proper season is at the festive Christmas and New-Year time, when such an apple is really valuable. The fruit has an irregular, furrowed outline, and is variable in form. One peculiarity is, that those of them which are most decidedly Pearmain-shaped are always the brightest, and most densely striped. It will be seen from these brief particulars, that this is essentially an amateurs' variety, to be grown where there is but limited space for tree planting. The illustration sufficiently explains the form and general size of the fruit of this variety.

Digswell. WILLIAM EARLEY.

CULTURE OF GREENHOUSE STATICES.

AMONGST these we have some of the most serviceable decorative Plants in cultivation. Take, for instance, as types, such kinds as S. Holfordii, S. profusa, &c., plants which are most accommodating in their season of blooming, and which may, with judicious treatment, be had in bloom at any time of the year when required.

It is, however, more particularly as Winter Decorative Plants that I would draw especial attention to the superior merits and adaptabilities of these Statices. They are not only effective for Conservatory embellishment, but admirably adapted for Sitting-room stands, and the various purposes for which plants are in request for house decoration. When cut and associated with the more decided colours of flowers, their fine corymbs of soft blue are very effective. Taken as a whole, but few plants can vie with them in general utility. Easy of management, and freely propagated in quantity, they are assuredly worthy of more general cultivation. How, then, is it, I would ask, that these fine old plants are so seldom met with, even in places where plants are grown in quantities for ornamentation, and where every care and attention is lavished upon plants not nearly so beautiful or useful? Is not the cause to be ascribed to the desire for, and the craving after, new and costly plants which has existed as a sort of fashion, but which, I am pleased to observe, is fast giving place to a more just appreciation of plants of real intrinsic worth, irrespective of their newness? We had in bloom here last December upwards of fifty plants of these Statices, well-grown plants, with the pots completely hidden by the rich green foliage. They were grown in 7-in., 8-in., and 10-in. pots, and on the plants of S. Holfordii the flower-stems varied from ten to sixteen in number.

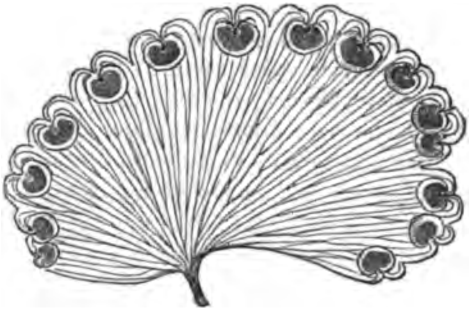
I will now note a few particulars which may serve to guide those not experienced in the culture of these remarkably free-growing plants. When required for winter flowering, strong, healthy cuttings must be selected early in February, and, after removing the greater portion of the leaves, they should be become weak and straggling, and cease to produce vigorous flower-buds. Bourbon and Hybrid Perpetuals should be shortened back to four or six buds from the base, removing all the small and cross branches at the same time. Roses like a deep strong soil, and as rich as it can be made. All beds and borders containing bulbs and spring flowering plants should now be carefully dressed, so as to give them a neat appearance.

Trees and Shrubs may be planted in open weather. They should be lifted carefully, without injuring the roots, and in the case of evergreens, as much soil should be removed with them as is possible; the holes to receive the plants should always be made ready beforehand, and when the tree is placed in the hole, the roots should be carefully spread out, and the finest soil put over them, filling it in carefully round the ball and pressing it firmly with the foot. When planted, if liable to be blown about by the wind, they should be properly secured to stakes; they should also have a good mulching of rotten dung, which will keep the soil from being frozen, and prevent its being dried up by the wind.

In places of limited extent, some practical knowledge is necessary to select only such shrubs and trees as are suited to the soil and locality. In the neighbourhood of most large towns, evergreens suffer much from soot and smoke, and yet they are indispensable in such places, for they hide ugly buildings, shut out unsightly objects, and secure seclusion and privacy. In general, Conifers are not admissible, but some of them may be used advantageously in many places. Yews and Arbor-vitæs are invaluable where soil and locality suit them. Hollies are not only the hardiest, but they are the most useful and best evergreens for ornamental planting. Aucubas are also very useful in small places. The species of Berberis, too, are very hardy and ornamental, B. Darwinii being a most beautiful shrub. Persons of little experience, when furnishing new grounds, should plant such trees and shrubs as they see grow well in the neighbourhood.

Plants under glass must now be carefully attended to. The winter, on the whole, has been favourable for plants in cold pits, frames, and greenhouses; damp has been the principal enemy to be guarded against. Air should be admitted freely at every favourable opportunity; but cold winds must be carefully shut out, otherwise they will do much injury. I advise air to be given as soon in the morning as it can with safety, and increased as the forenoon advances, and always to shut up early in the afternoon. Cinerarias and Primulas will now be coming nicely into flower.

A sowing of Peas and Beans should be made about the middle or towards the end of the month, to succeed those sown last month. A little Radish, Lettuce, Spinach, Parsley, and Carrot should be sown on a warm border. All gaps among Cabbages should be made good, and the ground stirred between the roots. Where the land is strong, it is advisable not to crop until next month. Having given at page 12 a list of Fruits suitable for amateurs, it has occurred to me that a short list of a few of the most useful Vegetables may not be altogether unacup by the stiff black stipites. Two or three pairs of compound pinnæ are produced at the base of the frond, the largest of them scarcely 1½in. long; while the upper part of the frond is simply pinnate, with the pinnæ slightly diminishing in size upwards, the wedged-shaped terminal one, both of the frond and pinnæ, being ½ in. in breadth. The largest of the simple pinnæ measure about 1 in. in their longer and ½ in. in their shorter diameter; and they are set on stiffly at an angle with the plane of the frond, so that the front margin is projected forwards. The young fronds are very beautiful, being of a fine red colour, the mature fronds being of a pale green.



We borrow the foregoing particulars and the annexed magnified woodcut representation of one of the larger pinnæ of this beautiful novelty, from the specimen of *Baildon's Nature-Printed Ferns,** which has lately been issued. M.

SEASONABLE HINTS FOR AMATEURS.—FEBRUARY.

THE short, dull days of winter are now nearly past. This season they have been more than usually dull and cheerless, from the great fall of rain we have had; but the appearance of the Winter Aconite and Snowdrop reminds us that now spring is fast approaching, and with it a busy time for the Amateur Gardener. All plans and arrangements for the next season should at once be decided on, if not already done. After the long continuance of mild weather we have had, we may have severe frosts and snow in spring, and should this happen, the greatest attention will be required in seeing that everything which needs it is properly protected, otherwise serious consequences may result, as most plants are already in a forward state.

Some of the hardy Roses may now be pruned; the remainder may be left for a month or six weeks longer, so as to favour a succession of flowers. The pruning of the tender ones had better be deferred until next month. Moss Roses should be pruned back to two or three eyes, otherwise the shoots will state, divided them, keeping safe all the young roots, put one sucker in the centre, and five or six round the sides of a 32-sized pot, and in a year made "perfect specimens" of them, with, of course, a greater profusion of bloom than if I had depended on one plant only. Annual or biennial division is an excellent plan to pursue with many of these plants, which in a wild state run each year a little further into the deposit of decaying herbage which surrounds them, or, it may be, into the sand and grit which are for ever being carried down by natural agencies. In our long summer some of the Primulas will make a long growth with the roots much exposed,—a state for which dividing and replanting firmly, deep down to near the collar, is an excellent remedy.

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* *Baildon's Nature-Printed Ferns*, prepared according to his new patented process, by Henry C. Baildon. The descriptions by Thomas Moore, F.L.S., &c. London: Reeve & Co. A set of 12 capital fern portraits on four folio plates, produced by a novel combination of nature-printing and chromolithography, the structural details being added by means of a cleverly drawn woodcut of each of the plants.

Of course there are many with which an entirely different course must be pursued, which demand to be permanently established, above all things never protruding a root above the earth—things like Spigelia marilandica and Gentiana verna, for example. This last is very rarely succeeded with, and yet I am convinced that few will fail to grow it, if they procure in the first instance strong established plants; pot them carefully and firmly in good sandy loam, well drained, using bits of grit or gravel in the soil; plunge them in sand or coal-ashes to the rim, in a position fully exposed to the sun; and give them abundance of water during the spring and summer months, taking, of course, all necessary precautions against worms, slugs, and weeds. And such will be found to be the case with many other rare and fine Alpine Plants. It would in some cases be desirable to remove these to a cold frame, with a northern exposure in winter; but many kinds, very hardy and stiff in texture, would be better plunged deep in porous material, on a porous bottom, and under a north wall, where they would be excited as little as possible during the winter months.—W. ROBINSON.

FERTILIZERS FOR FRUIT-TREES.

IN relation to appropriate fertilizers for fruit trees, a diversity of opinion prevails. All agree that certain substances exist in plants and trees, and that these must be contained in the soil, in order to produce growth, elaboration, and perfection. To supply these, some advocate the use of what are termed "special manures," while others ridicule the idea. I would suggest whether this is not a difference in language, rather than in principle, for in special fertilizers, while the first apply simply those principles which correspond with the constituents of the crop, are not the second careful to select and apply manures which contain those elements, and do they not in practice affix the seal of their approbation to the theory which they oppose? Explode this doctrine, and do you not destroy with it the principle of manuring, and the necessity of a rotation of crops?

Trees exhaust the soil of certain ingredients, and, like animals, must have their appropriate food. All know how difficult it is to make a fruit-tree flourish on the spot from which an old tree of the same kind has been removed. The question is, how shall we ascertain what fertilizing elements are appropriate to a particular species? To this, two replies are rendered: some say, analyze the crop; others, analyze the soil. Each, I think, maintains a truth, and both together enunciate nearly the whole truth. We need the analysis of the crop, to teach us what its ingredients are; and that of the soil, to ascertain whether it contains those ingredients, and if it does not, what fertilizers we must add to supply them. Thus by analysis we learn that nearly a quarter-part of the constituents of the pear, the grape, and the strawberry, consists of potash. This abounds in new soils, and peculiarly adapts them to the production of these fruits, but having been extracted from soils long under cultivation, it is supplied by wood ashes, or potash, the manurial value of which has of late greatly increased in the estimation of some cultivators.

Among the arts of modern cultivation, universal experience attests to the great advantage of mulching the soil around fruit-trees, as a means of fertilization, and of preservation from the drought and heat so common with us in midsummer. Thus experiment has proved that on dry soils, where the earth has been strewn with straw, the crops have without manure been as large as with it, in those cases where evaporation has disengaged the fertilizing elements of the soil. Mulching is of more importance than most people are aware of. Having been engaged during the past three winters in removing some very large trees with a machine, I have experienced the full utility of mulching material. Amongst those removed last winter were two cedars of Lebanon about 40 ft. high; these have not looked back in the least, notwithstanding the very hot, dry summer. Indeed, we have not lost one large tree that has been removed with the machine during the past three seasons, and I attribute this success to my having kept them well mulched.

Osberton. EDWD. BENNETT.

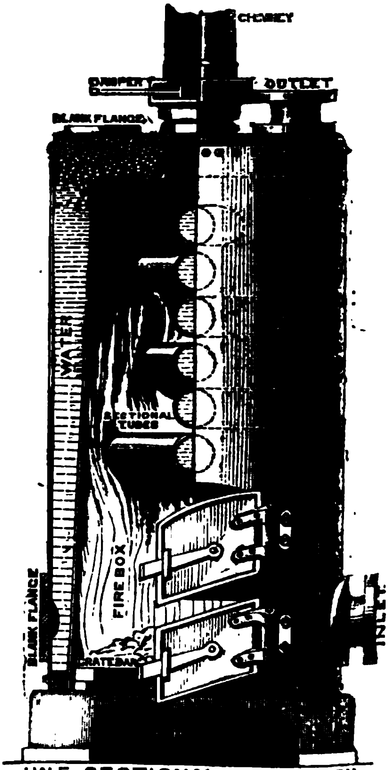
GREEN'S PATENT HOT-WATER BOILER.

WE have heard so favourable an account of this new boiler from Mr. Eyles, that we are glad to have the opportunity which Messrs. Green have afforded us, of giving the accompanying representation of it. Mr. Wills also, has been good enough to communicate the remarks which follow:—

"The Messrs. Green and Son, of Leeds, have for years been studying to produce, for the purpose of generating steam, a powerful boiler, which could be easily placed in position, and would supply the amount of power required at the lowest possible cost in fuel, labour, &c. Having thoroughly succeeded in this, the idea occurred to them that the same principle would hold good with boilers adapted to the purposes of horticulture, or for heating buildings of any description. They accordingly had some made on the same principle, and one of these, sent for trial to the Royal Horticultural Society's Gardens, South Kensington, has proved itself to be the most economical boiler in present use.

"The following are some of the advantages which this new boiler possesses:—1. It requires no brickwork in setting; this is a very important consideration, for should the necessity at any time arise to repair the boiler, much labour and considerable inconvenience are avoided, besides which there is the saving in bricks and labour in the first instance. 2. It does not require a bulky chimney-stack, a stout sheet-iron chimney answering every purpose. 3. It is complete in itself, having perfect means of regulation. 4. It takes up little space, and can be fixed in places inaccessible to other boilers. 5. It consumes its smoke, and is economical in respect to fuel; this last is a very great advantage, for the expense of fuel, in many parts of the country, proves a serious hindrance to those who would gladly gratify their taste for horticulture. 6. In case of an accident, it can be taken away, and another put in its place in the short space of two hours, during which little or no harm could happen, even during frosty weather.

"Mr. Green has, I believe, conferred a great boon on amateurs and persons of limited means, by producing a boiler capable of heating a large or small space, with a very small quantity of fuel; and when once the pipes are warm—which, according to Mr. Eyles' experience, will be in the course of half an hour after the fire is lighted—very little attention is required to keep all right.



HALF SECTIONAL ELEVATION

"The boiler at Kensington is 4ft. 8in. high, and 2ft. 4in. in diameter, and has upwards of 100ft. of four-inch pipe attached to it. The amount of coke consumed in twelve weeks, since the 15th of October, is six chaldrons, which, at 11s. 6d. per chaldron, amounts to £3 9s. 0d. As it has been found necessary to keep one of the furnace doors almost continually open, to check its action, it is fair to assume that the boiler would, if required, do double the work here allotted to it. Mr. Eyles reports that he cannot tell what its capabilities really are, his difficulty having been to keep the heat sufficiently low. The boiler is made of the best wrought iron, capable of bearing a pressure of 40lb. to the square inch, and the tubes, which are placed crossways inside the boiler and immediately over the fire, are connected with the inner plate. There is but a small space left for water between the two iron plates which form the boiler, and as the action of the fire takes immediate effect on the inner surface and tubes, the water must be made to circulate very rapidly. The boiler may be seen here, both at work and otherwise."

Ashburnham Park Nursery, Chelsea. J. Wills, F.R.H.S.

THE PERSIAN LILAC, FOR EARLY FORCING.

ALMOST every garden establishment in the country is expected to furnish a constant and abundant supply of cut flowers during the entire season; and there is, generally speaking, little difficulty experienced in realizing this expectation during ten months of the year; but during the remaining two, namely, January and February, even those who can command every appliance sometimes find a difficulty in meeting the demand.

This consideration induces me to call attention to the beautiful sweet-scented shrub which I have named, whose flowers are so suggestive of the balmy breezes of returning spring, that they seldom fail to secure for it the position of a general favourite. It has, moreover, the great advantage of being more easily forced than almost any other shrub; so much so, that it may be had in flower at almost any time. In fact, so accommodating is this plant that a bush of any manageable size may be taken up from the shrubberies, potted, and placed in a warm house, and successfully forced into flower.

Great advantage will, however, be found in having a number of plants prepared and kept for the express purpose of forcing. Any time during the winter let a number of strong suckers be secured from the shrubberies, or an old bush may be taken up and pulled to pieces, selecting a number of rods with a few fibres attached to them; cut these into lengths of about nine inches or a foot, and clear off any suckers or buds from amongst the fibres and from the lower part of the stems, the object being to form dwarf standard plants with clean stems about six or nine inches in length. Plant them in rows at about two feet apart each way, and during the first summer stop some of the strongest shoots, to induce them to form compact, well-balanced heads; and some time during the succeeding winter or spring cut each shoot back to within two inches of the stem. During the following summer they may be expected to form compact round heads, consisting of many shoots, and nearly every shoot terminated by an inflorescence. In the course of the ensuing winter the plants may be taken up, carefully potted, and successfully forced into flower as required.

Some sixteen years since I prepared a number of plants in the manner I have described, and a portion of them have been forced successfully every winter since that time. The same plants, however, are never forced two winters in succession, but all are transplanted every spring, having their roots at the same time slightly reduced, the suckers, if any have been formed, removed, and the shoots shortened, or rather cut close back, so that the plants are never allowed to flower excepting when they are forced.

To illustrate the small amount of forcing these plants require, I may state that two dozen of them were taken up and potted into 8-in. and 10-in. pots on December 2nd, 1867, and were at once placed on the floor of an early vinery, where the minimum temperature ranged from about 55° to 60°. The blossoms began to open during the first week of the following January, and on the 7th of that month the plants were removed into a cool conservatory, where at the end of January they were in full beauty, most of them bearing upwards of a hundred thyrses of blooms. I need scarcely say that, besides furnishing an immense quantity of cut flowers, such plants form no despicable objects for conservatory or greenhouse decoration at that season of the year.

It is important that they should be removed from the forcing-house into a cooler atmosphere as soon as the blooms begin to expand. When they have done flowering they should be slightly protected for a time, and then planted out. About the end of March their shoots should be cut close back, and in the second succeeding winter they will again be in a fit state for forcing.

Culford Hall. P. GRIEVE.

THE POMEGRANATE.

IN Holy Writ we read of the "Paradise of Pomegranates." The ruddy glow of beauty on the cheek of the fair one, is there also likened to the rind of the Pomegranate; and well had the poet marked the splendid streak of crimson in the opening blossom of this tree, when, at the feast of flowers, he proposes to "see if the Pomegranates have budded." It is evident that this tree had played an important part in what we should now call the Orchard of Palestine. The extreme beauty and abundance of its bright scarlet flowers, have from time immemorial been associated with those of the Lily and the Rose, wherever loveliness and beauty had to be pictured vividly to the imagination; and not only did its blossoms bear their share in the flowery language of Eastern canticles, but the rich, refreshing juice or wine of its fruit was reckoned a beverage of unquestionable excellence. There can be no doubt that from the earliest days of civilization the fruit has been freely used, and as the tree grows readily from seeds, layers, or cuttings, the burning beauty of its blossoms, and the glowing harvest of its laden boughs, could scarcely fail, even then, to cause it to be sought after and cultivated. We have, indeed, its cultivation as an orchard tree manifest in Jerusalem, and again at Carthage, for the generic name Punica points to Carthage as its home. Its English name is truly characteristic, and means an apple full of seeds.

Although this plant, like the Olive and the Vine, belongs to a belt or zone of climate a little to the southward of ours, yet the fact stands unquestioned that in certain favoured spots in England both Vines and Pomegranates will ripen their fruit in the open air. I can testify to the Pomegranate's fruiting on a flued wall in the open air in the valley of the Thames, and that it is but one shade less hardy than the peach. [See p. 23.] There can be no good reason given for neglecting the culture of this truly classic fruit, excepting that very potent one, that to the great mass of the people, rich and poor, the plant, the flower, and the fruit are all alike unknown.

You drink the juice of the Pomegranate, for it is not a fruit calculated to be *eaten;* and if ever in the world there has been a cup that cheers, surely the ruddy juice or wine of the Pomegranate has, without inebriating, done the duty of hospitality to perfection. Its juice is not quite so sharp as that of the Pine-apple, and it flows clear from the fruit. To the invalid, the fever patient, the sick, and the dying, this cheap fruit will always be welcome. A splendid fruit recently before me, nearly a pound in weight, was purchased for 3d., and small fruit imported from Valencia were offered at 1s. per dozen in the open market in Manchester last November. Some thirty years ago I purchased my first Pomegranate in Covent Garden, London, not for luxury, but business; and with the living plant and ripe fruit before me, I began to read up its history, fearing that some day I might have to cultivate this notable fruit-tree. Its free growth rather alarmed me, and seemed by no means a recommendation, for I found it would attain a height of 20ft.; and in order to get practically acquainted with the working department,—soil, situation, pruning, training, and the like,—I had to travel many miles to see a tree trained to a flued wall, and I recollect right well with what intense delight I got the first sight of a Pomegranate-tree in bloom. Thirty years have gone by, and yet we do not see this fruit exhibited in dishes at our fruit and flower shows, done up and neatly garnished *secundum naturam,* with twigs and leaves of the parent tree.

We have glass in various forms and devices, and artificial heat at our disposal, from the cheap lean-to orchard house, up to the costly bark stove, with top and bottom heat, if necessary, all the year round. We see the Pear-tree rising to the height of 30ft. or 40ft. in an English orchard, and we see the same kind of tree in an orchard-house bearing fruit freely with only about 4ft. of headway, and less than a cubic foot of earth to grow in, cleverly fed and watered in a clay flower-pot by the skill of the experienced fruit-grower. Therefore, instead of warring with the elements out of doors, this is the direction to take with the Pomegranate. The splendid bright scarlet flowers of the plant will help to encourage the cultivator. Seeds to any extent can be got from the ripe fruit to begin with. The skin of the fruit is hard and leathery, enabling it to travel freely with little packing. In shape it is like an immense poppy head, or like a carboy in miniature, with a bottle-neck, the diameter of a fine one being about 4in., and of an average specimen about 3in. in diameter, and the same in height. The colour is variable, from a deep crimson on a warm yellow ground on one side only, up to a deep crimson all over; indeed, the red colour runs through the petals of its flowers, the rind of its fruit, and the pulp in which its seeds are imbedded; while the rich, thin juice expressed from it is also of a lively red colour. In its botanical character, this fruit stands alone, with nothing very nearly resembling it in the natural order; its legion of stamens, and its sack full of seeds walled up in cells or partitions, will not allow it to fraternize with the odorous myrtle, for it has no oil bottles in the skin of its fruit and its leaves like that fragrant family, and it may therefore be said with truth of the Pomegranate that it may be long before we see its like again.

Salford. ALEX. FORSYTH.

EARLY PANCALIER JOULIN SAVOY.

LAST year, Messrs. Veitch and Sons sent out a vegetable under the above name, which, after a season's trial, has proved itself so very worthy of cultivation, that I do not hesitate to recommend it to all those who may require a first-rate early summer Savoy. In appearance it is not unlike the Early Ulm, usually grown for summer use; but when well grown, it is superior to that variety in every respect. It is earlier by a week, much more robust-growing, though it does not exceed 8in. in height, of a darker green than the Ulm, and much more fleshy in the leaf, very tender, and with regard to flavour, I consider it superior to any other variety in cultivation. For the benefit of those who may need the information, I would advise that a sowing be made the first week in March, and another at intervals of three weeks up to the middle of June. Cabbages may then be cut from July up to Christmas. From its dwarf habit of growth, it is admirably adapted for those who have small gardens, or for the cropping of fruit-tree borders, it not being necessary to plant wider than a foot apart each way. They must have what our forefathers called a good, holding, fat soil to grow in.

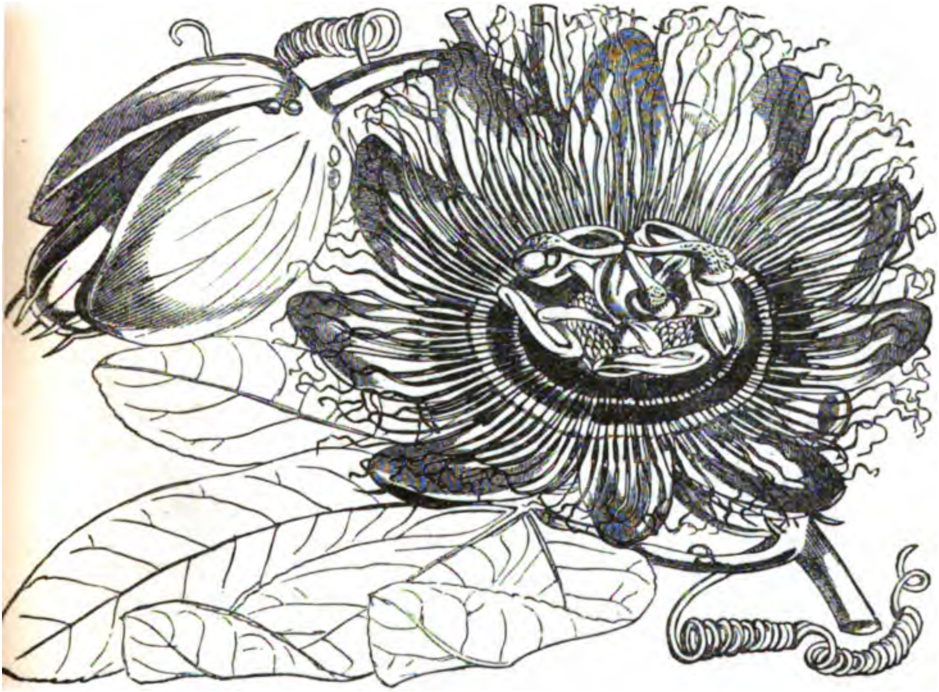
From the same source I obtained a very desirable variety of Cabbage for early spring use, called Atkins' Matchless (Veitch's Improved). This sort, being very short in the stem, is not so liable as others to injury from frost. It is very early, tender, and delicious, and not liable to run to seed. My seed appears to have come from a very true stock.

Lillesden, Hawkhurst. THOMAS RECORD.

PASSIFLORA CINCINNATA.

ON a recent visit to Dropmore, we saw this charming new Passion-flower blooming freely in one of the greenhouses there. It had been raised from South American seeds, and seemed to be new; and such indeed it proved, for our confrère, Dr. Masters, who accompanied us, and who has plunged over head and ears in the study of this difficult but beautiful genus, finds nothing like it amongst described species. Specimens of the same plant, gathered by Gardner, in Brazil, are, however, met with in herbaria. The annexed illustration is borrowed from the account of the plant given a short time since in the *Gardeners' Chronicle.*

We have here a valuable addition to our greenhouse climbers. The plant has smooth, cylindrical stems, furnished with stalked, digitate, or palmatisect, deep green leaves, cut into five smooth, coriaceous, oblong obtuse lobes, and bearing solitary flowers, in its leaf axils. The involucel consists of three broadly ovate, concave, green, softly pubescent bracts, and the expanded flower measures about four inches in diameter, the calyx lobes and petals being whitish, sprinkled with violet-coloured spots, and the corona consisting of several rows of thread-like processes, the outermost longer than the sepals, twisted and curling like ringlets, whence the name, and marked at the base with alternating concentric bands of purple and white, but of a uniform violet hue elsewhere. The beauty of the deep glossy leaves, and the rich purple of the singularly twisted rays of the coronet recommend it for general cultivation, and deservedly secured for it a first-class certificate when exhibited before the Floral Committee. Under Mr. Frost's care the plant thrives in a cool greenhouse, and for the decoration of such structures we heartily recommend it. M.



THE GLADIOLUS IN 1868.

I CHEERFULLY sit down to give our floral friends a short *résumé* of my doings with the Gladiolus for the year just closed, feeling hopeful that the interest in this most beautiful of autumn flowers may continue steadily to increase, as it has done for some years. In my notes at the close of 1867 I expressed a belief that my habit of planting very early, and covering deeply (6 inches), was a mistake. In 1868 I adopted a totally different system with the chief portion of my stock, and I think I am justified in saying with complete success, so far as success was possible in the very hot year 1868.

I planted my five best beds, of 100 bulbs each, at the end of the third week in February, in rich fresh loam, intermixed with about one-fourth of the very heavily manured soil of the previous year, covering the bulbs two inches. This was very different from the deep planting of previous years, and I am of opinion it will be found better practice. The green shoots began to show, thick and strong, early in April, and when about one-half were well up, I gave a dressing of one inch of the same soil, and one inch more about the end of May. I commenced watering about the middle of May, and continued to do so in moderation every evening all through the season, up to the time of our exhibitions, about the end of August. This, and a liberal mulching of well-rotted manure in July, kept my stock alive and well, in the face of the great heat of last summer. The main bloom came early; the spikes were less tall than usual; the colouring of the flowers was, all through, more brilliant, and, I may safely add, more evanescent, than I ever remember to have observed before. The bulbs were ripe early, and took up large and in prime condition, generally; the quantity of spawn was greatly in excess of any year I ever remember; while seed was plentiful, and ripened early, and in fine condition. Such of my readers as are growers of the Gladiolus will observe a marked difference in the foregoing, on several points, from the results of preceding years. The past year was a bad one for shallow planting, and where it was possible to succeed moderately in 1868, the chances of obtaining a fine bloom in ordinary seasons by the same course of action will be greatly increased. I have said my bulbs took up well,—large, and good and dry. Their average depth from the surface, before being taken out of the ground, was not more than an inch, the soil having been gradually washed away by the incessant waterings. I had all placed in boxes, made specially for them, like those for Tulips, on a larger scale, by the middle of October, and I left them out for a month, lying on a Tulip bed, with the canvas over them whenever rain came. When I got them into the house, and had leisure to go over them to clean them, I found fully as many bulbs as usual dead, shrivelled up, and utterly worthless, and this in many cases, as my note-book tells me, where the growth had been fine, and the spike or spikes of bloom splendid. This is a heavy blow to young beginners. I know several friends whom I have induced to order 50 or 100 bulbs to begin with, and whose little stocks I have supplemented with a few of my spare varieties, who complain with long faces at the blooming time that they have had very few good spikes; and when the succeeding winter has been got through, the supply of bulbs saved over for planting has been miserably small; bulbs of Gladioli seem to melt away in a strange manner, in the hands of all save the few who are possessed of all facilities for covering them, and of what is still more rare, a love of flowers sufficiently strong to induce them to devote many an hour during the winter, in the fruit and bulb room, to the close examination and supervision of their favourites. I have grown a most valuable stock of Tulips for many years, and I very rarely lose a bulb, not more than two or three in a year, out of a stock of over 2,000; but I never sit down to order my new Gladioli without having to go back, and repeat choice varieties, which I have grown in quantity for years, but which somehow have dwindled away.

I had a fine bloom of my own seedlings this year, some 800 to 1,000 good strong spikes, coming in rather late, and doing good service at show time. These I planted in March, about three inches deep, in good ordinary soil, well manured, and I top-dressed in May, and watered heavily about twice a week. The spikes were much taller, and the losses by decayed bulbs greatly less than in the named varieties. The novelties just let out are genérally finer the first year than they ever come after, so that it would seem to be true of other flowers, as Mr. Paul says it possibly is of Roses, when treating of the vigorous novelties of last year, in the FLORIST, "that many kinds really vigorous, when beginning life anew from seed, fail and sink under the fast life which, if there is anything in them, they are often compelled to lead."

The novelties sent out last season by M. Souchet were more numerous than usual, and I think, as a lot, not by any means up to the mark in quality. The half-dozen sent out together in 1865 (I think) have individually or collectively never been excelled. They were: Shakespeare, Eurydice, Newton, Maréchal Vaillant, Meyerbeer, Prince of Wales. While there are some few decidedly valuable acquisitions in last year's batch, there are not certainly six flowers at all equal to those just named. First I would name Ulysse, a splendid rosy violet flower, with bright crimson feathers, straw throat, and xxx spike; next I place Rossini, rich rosy crimson, scarlet feathers, throat crimson and white shaded; and third, Semiramis, deep rosy violet, crimson feathers, white throat—a very stylish flower, the blooms well shaped, but rather small, and the spike just middling. These three I consider, in the main, valuable acquisitions, and likely to hold a high place for some time. Taking the next trio, I would give the first place to Norma, soft white, pale mauve throat and feathers, the colours flushing or running after a day or two, large flower, fine spike; next La Fiancée, pure white, with red lilac throat, xx spike, good shape and substance, but fades quickly; next, Eugène Scribe, purple shade of rose, straw throat, crimson blotch, good spike. Then there are Mozart, Barillet Deschamps, Etendard, Uranie, Bernard de Jussieu, Marie Verdier, and a few others, not likely, in my opinion, ever to take a leading place, unless they improve on a second trial, which I do not expect. Byron bloomed very much finer last season, both as regards size of spike and depth of colour, than I had ever seen it before.

For the guidance of "the many" in their purchases for the coming season, I give the names of what I consider the 50 best varieties known to the public up to the present time. I do not profess to be infallible, nor (as taste and judgment differ) do I suppose that any two amateurs would agree exactly in their estimates of the various sorts; still I think the following approximates pretty closely to what the balance of educated (floral) opinion, if attainable, would pronounce for:—Shakespeare, Eurydice, Meyerbeer, Maréchal Vaillant, Prince of Wales, Newton, Ulysse, Rossini, Semiramis, Adolphe Brongniart, Thomas Moore, Princess Mary of Cambridge, Norma, La Fiancée, Eugène Scribe, Félicien David, Flore, Madame Vilmorin, Milton, Madame de Sévigné, Edulia, Belle Gabrielle, Apollon, Reine Victoria, Noëmi, Impératrice Eugénie, Byron, Ensign, Carminata, Etendard, Marie Dumortier, Samuel Weymouth, Mozart, Linné, Reverend Berkeley, Madame Basseville, Madame Rabourdin, Le Poussin, Empereur Napoléon, Lady Franklin, Sir Joseph Paxton, Anais, Achille, Le Titien, Chérubini, The Colonel, Bernard Palissy, Madame Furtado, Fulton, James Veitch.

For a still more numerous class, who may wish for a nice little collection at a moderate cost, I add a list of 50 older and less expensive varieties, of good quality, which any respectable establishment in the seed and bulb trade should be able to supply together, for about 50s.:—Archimedes, Madame Binder, Duc de Malakoff, Lælia, Jeanne d'Arc, Mrs. Siddons, Lord Raglan, Madame de Vatry, Ophir, Madame Souchet, Madame Eugène Verdier, Dr. Andry, Ninon de l'Enclos, Clémence, Adonis, Endymion, Isoline, Rembrandt, Napoléon III., Comte de Morny, Maréchal MacMahon, Marie, Bertha Rabourdin, Theresa, Julia, Ceres, Janire, Galathée, Rebecca, Cuvier, Brenchleyensis, Victor Verdier, Madame Domage, Dr. Hogg, Clara, Madame Haquin, Zoë, Mars, Oracle, John Bull, Madame Truffaut, Mr. Marnock, Madame Lesèble, Lord Granville, Juliet, Princesse Mathilde, Calendulacus, The Cardinal, James Watt, Canary.

Dublin. J. F. LOMBARD.

MONTHLY CHRONICLE.

ACCORDING to the Report of the Examiners of the Royal Horticultural Society, the December Examination of young Gardeners gave results which were below the average, the candidates showing themselves specially deficient in respect to orthography. The awards made were as follow:—

TOTAL MARKS {Floriculture ... ...1200. Fruit and Vegetables 1600.	FLORICULTURE.		FRUIT & VEGETABLE CULTURE	
	Cert.	Marks.	Cert.	Marks.
R. J. LYNCH, Kew	1	1040	2	1115
J. M'ARDLE, Chiswick Student	2	870	3	620
W. JOHNSTONE, Eridge Castle Garden	2	860	3	660
R. INGLIS, Kew	2	810	1	1280
R. WRIGHT, Kew	2	780	2	855
G. PAYNE, Acton	2	690	2	880
R. BARNES, Chiswick Student	2	680	0	425
J. FRENCH, Regent's Park	3	580	—	—
S. FUTRELL, Chiswick	3	530	3	795
J. MCGREGER, Kew	3	520	2	945
W. D. DICKSON, Kew	3	480	3	590
R. MEARNS, Kew	3	460	3	575
J. MERSUM, Chiswick Student	0	240	0	360

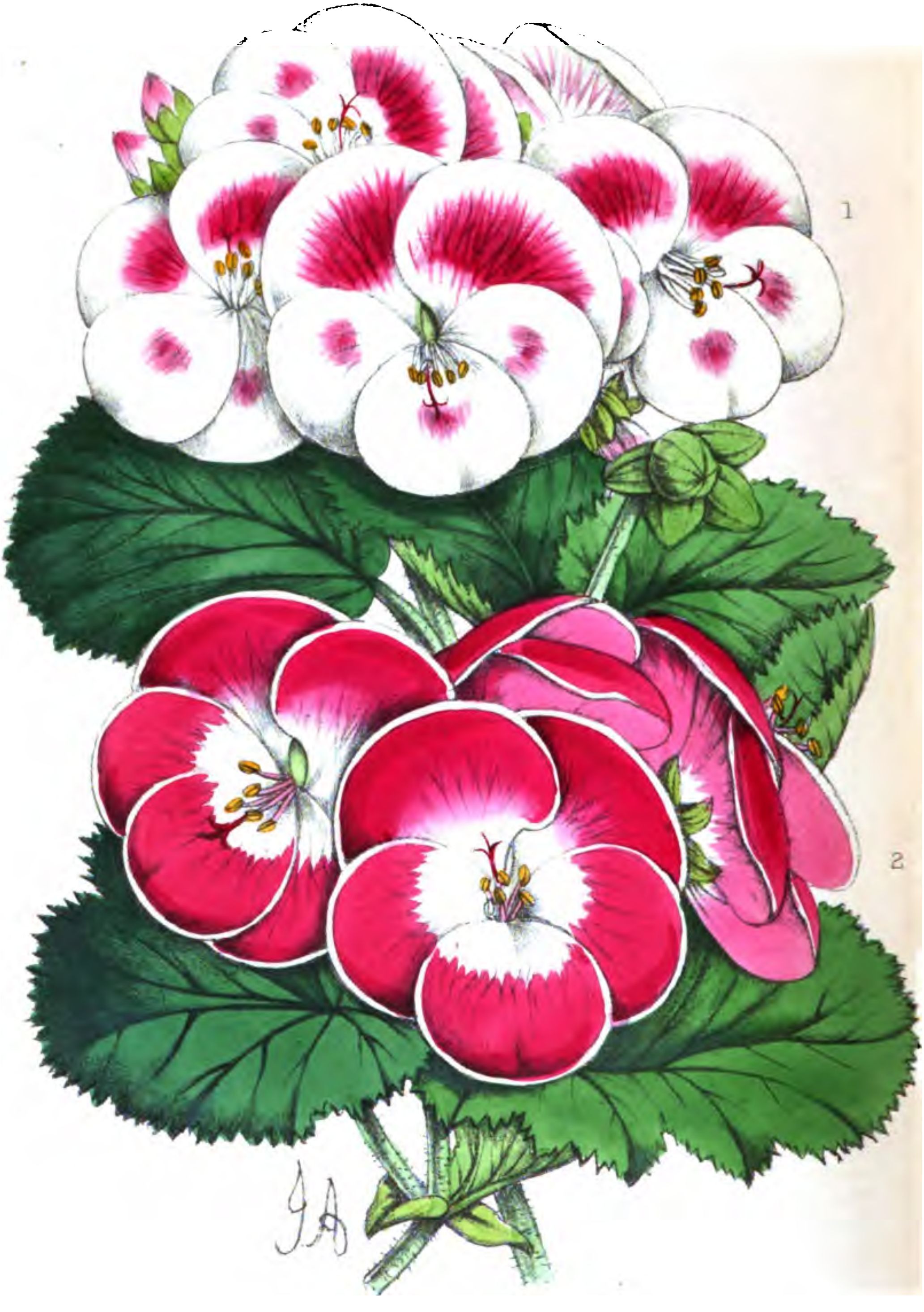
—— THE late Black Orleans is a fine but neglected Plum, ripening about the middle of October. It is round, sometimes inclining to oval, of a deep purple, with yellow flesh, and very rich and good. It is not such a wild grower as that called Sandalls, which forms a large tree, and comes earlier into bearing. Compared with the latter, it seems a superior variety as to size and flavour.

Obituary.

—— MR. WILLIAM HURST, the senior partner in the well-known and highly respected firm of Hurst and Son, seedsmen, of Leadenhall Street, died on the 24th of December last. He had been for some time in failing health, and had all but reached the allotted threescore and ten, being 69 years of age.

—— MR. EDWARD PARKE FRANCIS died on the 11th of January, at his residence, North Road Cottage, Hertford, in his 67th year. He was well known as a Rose-grower, and had been in business for nearly 40 years.

—— MR. JAMES BACKHOUSE, the senior partner of the eminent firm of Backhouse and Son, nurserymen and seedsmen, York, died on the 20th of January, at his residence, Holdgate House, near York, in the 75th year of his age.



1 Princess Teck.

2 Leotard.

NEW FANCY PELARGONIUMS.

WITH AN ILLUSTRATION.

LAST summer we had occasion to remark on the exceptionally fine character of the new variety of Fancy Pelargoniums produced by Mr. C. Turner, of Slough. These novelties were as much deserving of notice, on account of their diversity of colouring, as by reason of their excellent quality. We have to thank Mr. Turner for the opportunity of introducing to our readers, two of the best and most distinct amongst them, which have been accurately represented by Mr. Andrews in the accompanying plate. Latterly, until within the last few years, this very elegant and pleasing race of Pelargoniums was rather overdone with heavily-coloured flowers, both light-coloured and bright-coloured varieties being more sparingly met with. Mr. Turner has been for some time working with much success amongst the latter group, until it has been brought up to a high state of perfection, both as to size, form, and brilliancy; and now he has hit upon a most decided advance in the light-coloured group, as will at once be evident from a reference to our illustration.

Princess Teck (fig. 1) is a remarkably pleasing flower, and quite unlike any other variety of recent date; its finely-shaped stout-petaled flowers are white, with slight blotches of rosy carmine on the lower petals, and a much larger feathery patch of violet-rose on the upper ones; it will make a most attractive stage and exhibition flower. **Leotard** (fig. 2) is a rich, smooth, rosy carmine, with a blue dash on the upper petals, a clean white throat, and a narrow, evenly-defined white margin. Both were shown in May last in very fine condition.

M.

ON SOME NEW FRUITS AND VEGETABLES OF 1868.

THE New Fruits of the past year have been of unusual merit. The Grape alone, the noblest and most prized of all our fruits, has yielded enough novelty of note, to make 1868 a red-letter year. The Golden Champion is probably the most magnificent grape of which our country can boast. This splendid acquisition, which we have figured and described, is every inch a champion—golden in colour as the Muscat itself, with a flavour equalling its rival for richness, although partaking more of the Hamburgh character, and with a vigorous constitution, adapting it to fill worthily the blank which has long been apparent—that of a white companion to the Black Hamburgh. This, with the Madresfield Court Black Muscat, also figured in our last volume, the Royal Ascot, and the still older Mrs. Pince's Muscat, show rich acquisitions amongst Grapes during the last year or two. Some curious perfumed varieties, obtained as crosses from the Strawberry Grape, have also been reported, and of these we shall doubtless hear further during the present season.

Amongst Peaches and Nectarines the improvements which are being effected are marvellous. The gem of the season is Magdala, a peach of medium size, ripening in August, with very tender melting flesh, and an exquisite flavour ; it was raised from Rivers' Orange Nectarine.

Figs, which have been strangely neglected in this country, though there is no fruit so really delicious, have come in for a more than usual share of attention. In the Negro Largo (p. 5), introduced from Spain, we shall have gained a noble-looking fruit, of large size, prolific, and of excellent quality; while the little known Bourjassotte Grise, is perhaps, without exception, the richest of all Figs; and the Col de Signora Blanca panachée is both an extremely good and a particularly beautiful sort, the fruits being handsomely striped with bars of green and yellow. Of this latter we shall hope shortly to publish a coloured figure.

Of Apples, worthy of notice, the season has introduced to us—Annie Elizabeth, a large culinary winter variety; Beauty of Waltham, an autumn dessert sort; Coole's Seedling, another handsome dessert sort; and Mrs. Ward, a charming winter dessert variety. Amongst Pears, we have one sterling acquisition in the Summer Beurré d'Aremberg, which ripens in August, and was noticed in our last volume ; it was raised from the old Beurré d'Aremberg. Beurré du Cercle, an introduction from the Continent, is a large October Pear, with flesh resembling that of the Marie Louise and Glou Morceau ; and Madame Treyve, another sort of excellent quality, is one of the most beautiful pears in existence.

The past season was perhaps one of the worst for Vegetable culture that has ever been experienced; nevertheless, some acquisitions have been recognized amongst the novelties introduced. The improvements amongst vegetables are, for the most part, effected by careful selection of particular forms, and the husbanding of seed from these, rather than by hybridizing; but there are exceptions to this, and we have to thank the successful hybridizers amongst Peas, for the introduction of a race of early green and wrinkled Marrows of wonderful excellence. Laxton's Supreme and Alpha have maintained their high character; and now we have to record a greater acquisition, named William I., a particolored blue and white marrow, as early as Sangster's No. 1, and producing large, well-filled pods. Multum-in-Parvo, a larger form of Little Gem, is in some respects an improvement on that variety. Amongst Kidney Beans, the Salmon-coloured Kidney is a good addition to the dwarfs; while amongst Runners, Premier, and the Purple-podded, are real acquisitions, true Kidney Beans with running haulm, and consequently continuous bearers. The Sandringham White Celery is a selected and somewhat taller form of the Incomparable White, and Carter's Incomparable Red is an excellent dwarf kind; while of Endives, we have Fraser's Broad-Leaved Batavian; and of Lettuces, All the Year Round, to record as valuable novelties.

Of Potatos, which rank amongst the most important of Mother Earth's productions, we have abundance of new material. The past season was, however, one of the strangest and most trying for this particular crop that has ever been experienced ; and the excessive drought affected them greatly. Almond's

Yorkshire Hero is a fine sort. Carter's Main Crop, of the Red Regent class, will prove a most useful variety, being excellent in quality, like the Regent itself. To these may be added, Giant King, and Veitch's Improved Ashleaf. B.

DOUBLE-FLOWERED ZONAL PELARGONIUMS.

TEN years ago who would have dared to have thought of a double-flowered Zonal Pelargonium ? yet they are amongst us, and they even threaten to elbow out the single varieties. The flowers of many of them are very double, and their colours bright and glowing, besides which their blossoms remain so long in perfection, if damp is kept from them, that they are exceedingly valuable as cut flowers. In fact I know nothing to equal them for button-holes, ladies head-dresses, &c., for they will last through a very hot day without falling to pieces or flagging. The plants require very similar treatment to the ordinary Zonals. Most of the varieties are strong growers, and a two or three-year old stool is therefore far preferable to a young vigorous plant; for in these the growth is moderated, and the quantity of blooms increased. The plants should be exposed to the open atmosphere at all favourable opportunities.

Madame Lemoine is a decided acquisition, the colour being quite new and distinct from that of all others in this section; it is very rarely, when this occurs, that all other good qualities follow in the same plant, but such is the case with this variety, which is a far better thing than is generally supposed. The flowers are very double, and the colour a beautiful delicate bright rose; the plant is free, but very dwarf, and altogether it is certainly the grandest Pelargonium that has been introduced for a long time. Emile Lemoine, which is also a new variety, is an advance on older kinds. In its habit, and in the style of expanding its bloom, it approaches nearer to the single varieties. It bears fine trusses and pips, the colour being a light orange scarlet. Triomphe de Lorraine is the next nearest approach to the singles in dwarfness; it bears very double imbricated flowers, of a bright cherry carmine colour, occasionally striped with white, and is a very free, noble, and attractive kind. Capitaine l'Hermite is a very bright orange scarlet, the truss large, and the pips double; a strong grower, but dwarf. Triomphe de Thumesnil is very similar to the foregoing, but with a slight shade of carmine in the flowers, Triumph is the brightest scarlet of any of the doubles, but is not so decidedly double as those already named; it is a very strong grower, and rather long in the foot-stalks. Surpasse Gloire de Nancy is very similar to the old Gloire de Nancy, a bright rosy carmine scarlet, of very fine form, and perfectly double; the flowers are so freely produced that it is a very showy variety, and one of the best. Andrew Henderson is a scarlet. Whether from the heat or the dryness of the past season. I cannot say, but it has with me fallen very short of the description given some time ago with the plate of it in the FLORIST. Madame Rose-Charmeux, or Henderson's Double Tom Thumb, and Cottington or Paul's Double Tom Thumb, are in habit perfectly distinct from any of the foregoing varieties, being even more moderate in growth than the well-known single Tom Thumb. These two are very similar in appearance, both as to foliage and flowers, but the latter is rather more double than the former; the colour is a dark crimson, the flowers coming in small trusses, freely produced. Could the blooms of Capitaine l'Hermite be put on either of these, it would make a grand addition to this class.

Several new doubles, both English and Foreign, are announced for the present year, and they are said to supersede all existing varieties.

Woolwich. H. CANNELL.

EFFECTS OF HEAT AND DROUGHT ON FRUIT TREES.

THE great heat and drought of the past season were very trying for gardeners, and perhaps the oldest never experienced such a deficiency of common vegetables. Still, in these parts most kinds of fruit were abundant, and generally of good quality, though they ripened prematurely. Peaches were all gone before the usual time of ripening, and also apricots; these latter were not only plentiful, but of excellent quality, and the trees remained healthy during the severe drought. The same was the case with apples, pears, and plums, but not with cherries, especially on southern aspects, perhaps owing to the time of ripening being more early. These remarks accord with Mr. Cox's observations (1868, p. 233).

My chief object is to notice that except thinning out the superfluous young wood or shoots, the trees were neither pruned nor nailed in close to the walls, until the fruit ripened. Thus they had the benefit of light dews during the night, and the fruit had more shade from hot sunshine; and though the roots lacked moisture, yet, as I have said, the trees were healthy. But I observed that the reverse was the case with some peach trees, which were trimmed and kept close to the wall in the usual way. Though they were well watered during the drought, their leaves were injured by the "red spider," and soon fell off, from which the fruit was deprived of nourishment, and, in fact, became scarred and worthless. Such treatment, however, would have been right in a cooler season. This shows that in summer pruning one should be guided in some measure by the state of the atmosphere. These remarks are also applicable to Espalier trees. I never had such abundance of excellent pears, and yet the trees were not pruned until they were gathered.

This is accounted for by the reasons named above, and also by the encouragement afforded to the roots by the greater quantity of shoots and leaves. Being embedded in dry dust, the roots required all the nourishment they could obtain, through the influence of the tops. This important matter is often overlooked, especially by beginners in gardening; but it is true, and deserving of attention. It reminds me of a conversation which I once had with a great Horticulturist on the summer pruning of fruit trees. He pleasantly observed that young gardeners should not be allowed to carry knives in summer; meaning that they are apt to use them too freely when trees are growing, and too sparingly while they are at rest. I may have mentioned before in these pages, that sickly trees may be restored to health by allowing them to grow wild for a season. The more abundant foliage which this mode of treatment secures, furnishes from the atmosphere a more copious supply of nutriment to the roots.

Cossey Park. J. WIGHTON.

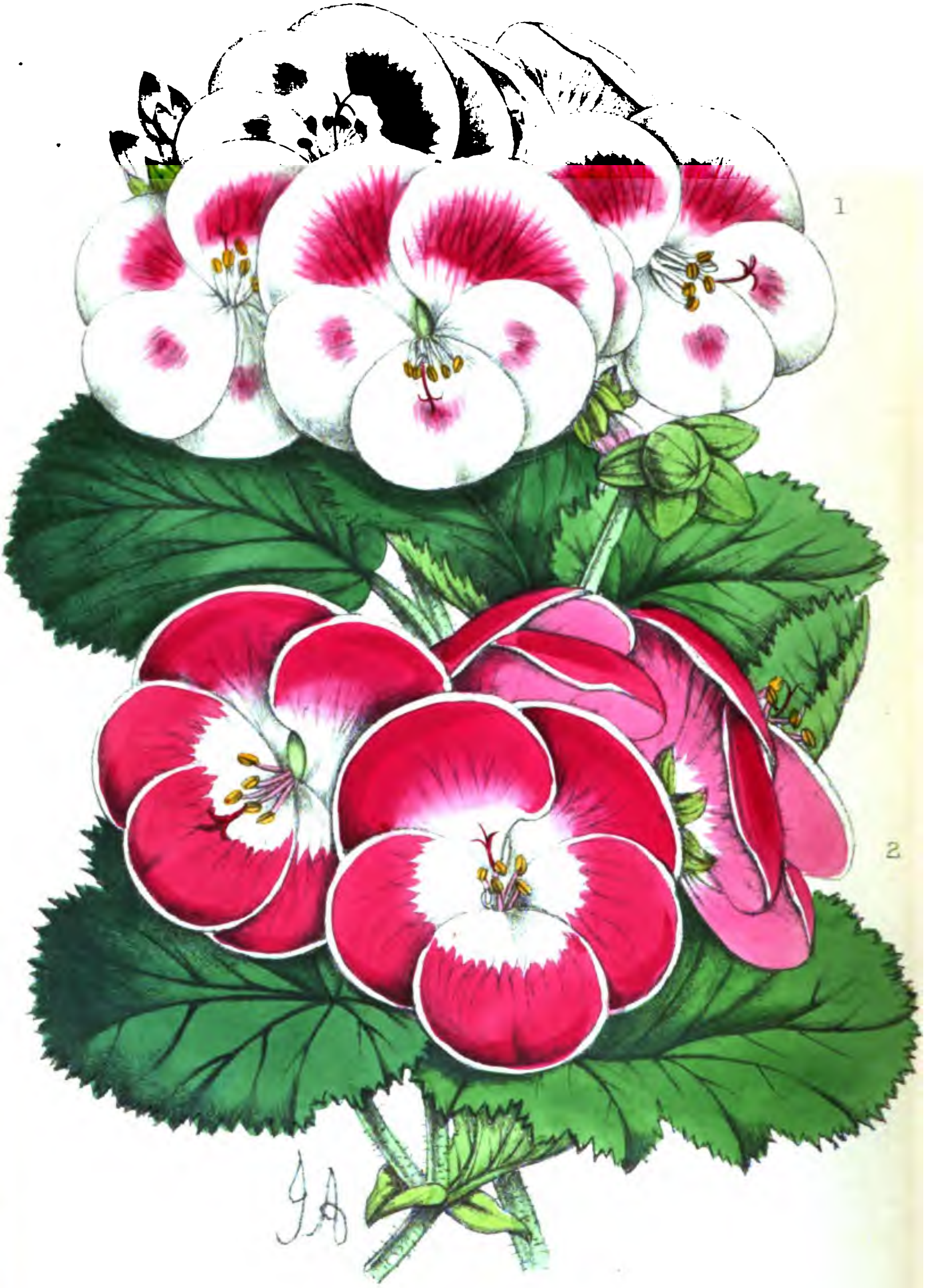
THE POT-CULTURE OF FIGS.

PROPERLY managed, Fig Trees in pots produce fruit in greater abundance, and of a richer flavour than those that are planted out, for, the Fig being a gross feeder, it is difficult, under the latter conditions, to restrict the action of the roots, while plants in pots are perfectly under the control of the cultivator. With a collection of Figs in pots, a day will very rarely pass, from June to Christmas, on which ripe Figs cannot be gathered; in September, October, and November they will be abundant, that being the ripening season of the second crop of the early varieties, and the first crop of the late ones.

The Fig thrives best in good yellow loam, on a chalky or dry gravelly subsoil; but for pot cultivation the soil must be somewhat richer. The following answers admirably :—two-thirds good yellow loam to one-third lime or brick rubbish, with a liberal addition of rotten manure and burnt ashes. The same mixture may be used for potting the plants in all stages of growth.

Figs may be produced on quite small plants in 5-in. pots. The most eligible size, however, and the largest that need be used, is the 12-in. pot; for as much fruit can be grown in a pot of this size as in any others. Young plants should be repotted early in spring into larger pots, giving them liberal drainage. They must be induced to grow on freely. After they have attained to a fair size, so as to bear fruit freely, and have been shifted into the largest-sized pot allowed, it will be sufficient, instead of repotting, to take the plants out of the pots while at rest, and after shaking off most of the old soil, and shortening the roots considerably, in the same way as is practised with Pelargoniums, to repot them in pots of the same size; or, in other cases, a very good plan is to pick away a great portion of the surface soil, roots and all, say, half-way down the pot, and to refill with fresh soil. In this way they may be grown in the same pots for years. During the summer the plants will derive much benefit from frequent top-dressings of manure, mixed with a little loam.

While in a growing state, Figs require a great deal of water; indeed, when the pots are well drained, and filled with roots, they can scarcely get an over-supply; and they are even benefited at times by placing the pots in shallow pans of water. Manure-water may also be applied with advantage two or three times a week, when the plants are swelling off their fruit. When, however, the fruit is ripening, water must be applied more sparingly, as an overdose then is very apt



1 Princess Teck
2 Leotard

pot, in full bearing condition. It is about seven years old, and produces fruit most abundantly every season, which ripen beautifully. I have gathered as many as five or six dozen figs during the course of the season from plants but very little larger than this; and one plant, of about the same size, in ripening off its second crop, continued in bearing for over six weeks, during which long period scarcely a day passed without one or more ripe figs being gathered from it. This variety is of a stiff, stubby habit, rarely growing more than two or three inches in a season, so that it requires but little pruning or pinching, though it is necessary at times to thin the fruits, which come in clusters. Others, such as Angélique, which is of a robust growth, require much pruning and pinching; while others, again, Lee's Perpetual, or Brown Turkey, being of medium vigour, do not need so much pinching as the stronger-growing varieties. In all cases, however, when the plants are in good health, considerable attention will be required to keep the growing shoots pinched back, since they push up fast; some time might be profitably spent every day in this manner. It is easy and pleasant work, and, unlike pruning, a mistake in regard to it can scarcely be committed.

Chiswick. A. F. BARRON.

FAST LIFE AMONG THE ROSES.

RECENTLY I proposed the following query, when writing on new Roses:— "Do many kinds, really vigorous when beginning life anew from the seed, fail and sink under the fast life which, if there is anything in them, they are often compelled to lead?"

Many letters have reached me on this subject, and assuming that the writers are readers of the FLORIST, I cannot do better than answer them through its pages. One correspondent, writing anonymously (I wish people would not write anonymously), facetiously asks if I mean to assert that there are fast individuals of the genus *Rosa* as well as of the genus *Homo*; for if so, he would wish to have them pointed out, that he may set his mark on them, and have them excluded from the precincts of his domain. Very good! Another asks whether, as a practical horticulturist, I can possibly believe in "that absurd theory" the wearing-out of Roses. There are other questions of a more serious, modest, and practical bearing which I need not quote, but I will endeavour to answer *all* by an amplification of the original sentence.

First, let me say I had no intention of using the word "fast" in its slang signification, but literally as "swift, moving rapidly, quick in motion" (Walker). I have heard it said of a certain London firm that it kills or incapacitates a new partner by overwork every three years. A clever man and a willing worker is admitted, and finds such scope that he is almost always overtaxed. Now, it is much the same with new Roses. So soon as a new Rose is seen and known to be good, it is by some subjected to all sorts of stimulants,—as excessive heat, moisture, manure, &c.,—to get the greatest possible quantity of cuttings, grafts, and buds from it in the least possible time; these are taken off in rapid succession, and the young plants thereby acquired are again and again subjected to the same treatment. As in consequence the tissues are weakened, the functions of nutrition are deranged, and debility ensues, from "the fast life which the plant is compelled to lead." I do not say that individual plants cannot be brought back into their original health and vigour by time and skilful treatment; on the contrary, I have proved that they can; but they often remain in a debilitated condition for a long time after having been raised by this extreme forcing process, and there is danger of the reduced vigour becoming fixed or chronic. If by skilful and natural cultivation the vigour of a rose can be increased and maintained (witness Climbing Aimée Vibert and Climbing Devoniensis), surely it is probable that the converse is equally true,—that by unnatural and unskilful cultivation the vigour may be diminished and lost? Most practical horticulturists must, I think, have met with instances of both amongst the various classes of plants to which they may have given special attention.

My object in penning the original sentence was to enter a quiet protest against a practice which I should be glad to see discouraged and discontinued.

Paul's Nurseries, Waltham Cross. WILLIAM PAUL.

SEASONABLE HINTS FOR AMATEURS.—MARCH.

MANY very important operations require to be attended to this month, but the weather, which at this season is often of boisterous and uncertain character, will rule these. No favourable opportunity should, however, be lost to push on work. All flower borders should now be gone over, and the plants be rearranged, if they require it. All the large herbaceous plants should be divided, the centre part thrown away, and the outside parts replanted, putting a little rotten dung in the holes for them. Phloxes and other tall-growing plants should be kept towards the back of the border, bringing the dwarfer kinds to the front. The borders should then be carefully dug and raked, leaving vacant spaces for sowing and planting annuals, also for planting-out in May Fuchsias, Salvias, herbaceous Lobelias, Heliotropes, Pentstemons, Antirrhinums, &c. Mixed borders, when judiciously planted, are very interesting for the greater part of the year. They are also a ready source from which large quantities of cut-flowers can be obtained for indoor decoration, without disfiguring valuable greenhouse plants. Even at this season, there are a great number of pretty spring-flowering plants, which, when planted largely in borders, make a place gay and interesting. Crocuses of all kinds are extremely beautiful, and when the sun shines brightly, many of them are quite dazzling. Then there are Snowdrops, single and double; the winter Aconite; the Dogstooth Violet; various Narcissi; Hepaticas, Drabas, Arabises, Alyssums, Primroses, sweet-scented Violets, &c. Gladioli do well in mixed borders, but they do best in beds; they should have a sheltered, well drained situation, and plenty of decayed manure should be incorporated with the soil. The corms should be planted from three to four inches deep, and may be put in any time from March till June; if planted at intervals of three or four weeks, a succession of bloom may be obtained. The soil between Tulips, Hyacinths, and other bulbous plants, should be stirred occasionally, and during severe frosts and hail-storms the plants should be protected by a covering of some kind. Dahlia roots should be put into a little heat, to start them into growth, and to get cuttings of them.

All plants intended for the decoration of the flower garden in summer should now be freely exposed to the air at every favourable opportunity. Autumn-struck cuttings should at once be potted off. Pelargoniums of all kinds will be benefited by a little heat, if it can be given to them, until they get established; afterwards, they will do very well in a cold pot or frame, but should be kept pretty close until towards the end of April, so as to encourage them to make growth. Verbenas, Lobelias, and similar bedding plants, when first potted, should, if possible, have a little heat until they begin to root into the fresh soil, when they will do well in any cold pit. Yellow Calceolarias are among the most useful of bedding plants; they begin to flower early, and continue more or less in flower until destroyed by the frost in the autumn; they are also among the most easily wintered of all tender plants, as they will do well even during a month's or six weeks' frost in a cold pit without any daylight, if only they are well covered up so as to prevent the frost entering. When the cuttings are put in late in the autumn, they root and do well in almost any situation where they are safe from frost. All the cuttings, whether kept over winter in pans, boxes, or cold frames, should now be planted out into nice leafy soil, in cold pits, about six or eight inches apart, so that they may form good stiff plants by bedding-out time; they should be well watered when planted, and when they require it afterwards. The pits should be kept close for a week or two after they are planted, until they begin to root into the fresh soil, when air should be admitted freely in mild weather. Lawns should occasionally be well rolled, whilst the soil is moist and soft, so as to prepare it for the machine, which, from present appearances, is likely to be wanted earlier than usual this season.

Much should be done during this month in the Kitchen Garden. All seeds should be sown when the soil is in a nice dry state, never when wet. If the soil be in a fit state at the beginning of the month; the main crop of Onions should be got in at once; they may be sown in drills or beds, but where ground is limited it is better to sow in beds, covering the seed lightly with soil from the alleys. A bed of Early Horn Carrot should be sown at the beginning of the month, and one of James's Intermediate towards the end of the month. Most people like to have good Parsley, of which a sowing should now be made. It is best to sow the seed in drills, as then all the worthless plants can be easily weeded out, and only the best should be left; if seed be saved the following season from the very best plants, a good sample will with a little care be secured. The main crop of

Parsnip should be got in towards the end of the month. Small sowings of Spinach and Turnips should be made. Radishes for succession should be sown twice during the month; more Lettuces should also be sown. Two sowings of Champion of England Pea should be made during the month, also a sowing of Early Mazagan Bean at the beginning, and one of Green Windsor at the end of the month. Some Celery should be sown in a little heat. Sowings of Brussels Sprouts, Borecole, and Savoys for main crop should now be made; also a sowing of Walcheren Cauliflower for summer crop. Cauliflower plants and Lettuces in frames should now be planted out; also the Tripoli Onion sown in August last. All the early Potatos should be planted as early in the month as possible, and towards the end of the month the main crop may be got in. Potatos like light, fresh land of good depth; and when planted on newly trenched land, the crop is in general large and fine. The distance between the rows must be regulated by the variety, some sorts having much smaller tops than others. 18 to 20 in. will in general be sufficient for the small-topped kinds, whilst 30 to 36 in. will not be too much for the larger growing ones. Jerusalem Artichokes may now be planted, and beds of Herbs made.

After the long continuance of open weather we have had, all planting and pruning should ere this be finished. This is the best time for grafting. The grafts should have been cut some time since, before the buds began to swell. Pear and Apple trees of worthless sorts may soon be renewed, by cutting off the heads, and grafting with good kinds. The operation is thus performed. The head of the tree is cut off, then a cleft is made from the top with a strong knife or chisel, the thick end of the graft is cut in the shape of a wedge, and inserted in the cleft, and so placed that both barks fit together on the outside; then a bit of matting is tied round, and some clay put over it. In general one graft is sufficient, as when properly done they rarely fail to grow; but novices would do well to put in two grafts, for then if one fails, there is still the chance of the other growing. Apricots, Peaches, and Nectarines should be well protected at night whilst in bloom, but the covering should be removed during the day, except during cold cutting winds or hail and snow-storms, when the covering will be better left over them. Strawberry plantations should now be cleaned and dressed.

Stourton. M. Saul.

GENETYLLIS TULIPIFERA.

THE present is a good time to commence growing the Genetyllis tulipifera (sometimes called Hedaroma). Select a healthy well-ripened young plant in a 48 or 32-sized pot, and shift at once into one a size larger, using fibrous peat broken to pieces (not sifted), with a sufficient quantity of sharp silver sand to cause water to pass freely through when water is applied. Provide ample drainage, over which place some of the roughest peat to keep the drainage open and efficient. When the plant is placed in the pot, let it be so situated that the soil slightly falls from the stem to the sides of the pot. This should be attended to in the cultivation of all hard-wooded plants, as the reverse condition often leads to their loss, from the water lodging round the stem. Pot rather firmly. Place the plant in a cool airy greenhouse, and pay strict attention to watering. Take the tops off all the stronger shoots as soon as free growth begins. This plant should never be subjected to the shading process, but be thoroughly exposed to light and sun. By the end of June, place it in the open air, where the foliage will soon become stiff and bronzed in appearance from exposure, and the wood well ripened. From the middle to the end of August flower-buds will begin to be formed; and by the end of September, the plant should be removed to the greenhouse, and treated as above directed.

By this mode of treatment fine large floral bracts of almost horn-like substance, beautifully veined and striped with red, will be produced; and these will continue in perfection for eight or nine weeks. If mildew should make its appearance, dust the plant immediately with sulphur, or the foliage will soon be destroyed. Genetyllis Hookeri, a somewhat more slender plant, will succeed equally well under the same treatment, and the flower-heads of this species continue in perfection as long, or even longer, than those of Genetyllis tulipifera.

Somerley Gardens. J. CHILMAN.

CELERY FOR EXHIBITION.

THE neighbourhood of Nottingham has long been noted for the gardening skill of its artisans, one of the special hobbies of the district being the growth of Prize Celery. This specialty has lately formed the subject of a lengthy article by Mr. W. P. Ayres, in the gardening department of the *Notts Guardian*, of which article the following is an abstract:—

"The largest and finest-formed Celery is that called Hooley's Conqueror, the kind with which the champion grower, Mr. Hooley, has succeeded in conquering all competitors. *It is* a red Celery, remarkable for its broad, thick, fleshy leaves, which are almost free from ribs or corrugations, and is the result of careful selection for some years. For the cultivation of Celery the ground must be thoroughly drained to the depth of three or four feet, trenched, and enriched to the depth of two feet by the addition of manure and leaf soil, the manurial matter being as intimately mixed throughout the soil as possible. The best way is to trench and ridge the soil in early autumn, mixing the dung as the work proceeds. During the winter, in dry and frosty weather, the ridges should be frequently forked over, and in March or April they may be levelled down, and trenches for the plants prepared. These must be 4 ft. apart, and dug out 20 in. deep and 12 in. wide, and should run north and south. The bottom of the trench must be trodden quite firm, and 8 in. of perfectly decayed but rich horse-dung trodden firm, placed in it. The soil being then returned, the trench is ready to receive the plants. The reason for placing the dung so low, is that the roots may get to it and feed upon it just at the time when the centre leaves, those that will be blanched for exhibition, are pushing up. To produce plants for the early October exhibitions, the seed is sown early in April. A slight bed of hot dung must be made up to receive a small frame or hand-glasses, covered with good soil, and the seed sown thinly. When the plants have two or three leaves they are to be planted in nursery beds prepared by treading a piece of ground tolerably firm, and placing on it about 4 in. thick of rotten horse-dung and leaf-mould in equal proportions, which, being trodden firmly, is covered with an inch of rich fine soil. The plants must be put out in lines 4 in. apart, each being pressed firmly. Properly cared for, they will be fit to be transplanted to the trenches in two months from the time of sowing, say by the end of May. Then each trench must be forked over a *full* spit deep, and the plants put out a foot apart, preserving every fibre. Press the soil firmly about the roots, water well, and shade the plants until they are re-established. The summer treatment will consist of thorough cleanliness from weeds; copious watering twice or thrice a week according to the weather; and protection of the plants from being broken by rough winds. It may even be necessary after the plants get a foot high, to tie them loosely with matting, but the ligature must not at any time be allowed to get so tight as to cut the plants. In watering it is necessary that the water be warm from exposure to the sun. When the plants are 6 in. to 9 in. high, weak manure-water, prepared by soaking horse-dung and a handful or two of soot in a tub of water, may be given at each alternate watering, and a handful of soot may be scattered occasionally around the plants.

"For Prize Celery it is not customary to earth the plants much until they get the final earthing, but a little soil scattered over the roots about once a fortnight serves as a mulching, and encourages the roots to spread. From five to six weeks is the time necessary to ensure thorough blanching, and that is a very essential point in growing Celery for exhibition. At the time of earthing, the small leaves, and any suckers or secondary shoots that may have formed, are removed from the base; and then each plant, to the height the soil is to reach, is folded in clean strong white paper, and tied loosely with thin matting, not over strong, as it is necessary it should give way as the plant swells. Some use tubes, such as drain pipes, around the plants to support the soil, the tubes being filled up to the necessary height with fine light soil; but if tubes are not used, the soil must be banked up in the usual manner. Water must still be applied to the roots, and liquid manure, weak, but copious in quantity, must be freely administered—the weather, of course, being some guide as to the quantity required. When prepared for show, the Celery plants have the small outer leaves taken off, and being washed quite clean, are shown in pairs neatly tied together.

"The essentials of a perfect specimen of Celery are these:—The leaf or stalk broad, thick, solid, crisp, without ridges, and free from stringiness; the plants of fine form and weighty, dwarf and sturdy rather than long; and the inner leaves regularly grown, without speck, stain, or insect blemish. The blanching must be perfect, and if, in the red kinds, the pink colour does show, it should be of that delicate tint which indicates perfect fitness for table. In judging Celery, any plants that are pipy, hollow, or have rotten or discoloured leaves, are put aside, and a deformed or run centre is a certain disqualification.

"The secret of Mr. Hooley's great success as an exhibitor is like that of all other great cultivators—a vigorous plant, vigorously pushed forward to its final result. He begins late, by which he escapes the risk of the plants starting prematurely to seed, but he loses no time after he does begin, and rarely fails to bring his plants to the head of the prize list."

BOILERS WITH *v.* WITHOUT BRICKWORK.

MESSRS. GREEN and SON'S new boiler and its advantages have been spoken of (p. 39) in such glowing terms, that it may be worth while to look a little closely into the matter, in order to see if all the advantages claimed for it can be substantiated. Taking them in the order in which they stand, the first is that no brickwork is required in setting, and that thereby both bricks and labour are saved. This may be so where there is already a deep stoke-hole, or a cellar below the level of the house to be heated; but if there are no such places ready-made, can a boiler 4 ft. 8 in. high be fixed without both labour and brickwork? The next advantage claimed is that an iron chimney serves instead of one of brickwork. Now, boilers are nearly all fixed in sheds or buildings near to the structure to be warmed, so that there need be no difficulty about a chimney; the brickwork chimney-shaft will not rust out, and, to use a common phrase, the fire will draw better with it. No. 3 I pass over, not having had any experience in such matters. No. 4 cannot be let off so easily. It is stated that the boiler "takes up little space, and can be fixed in places inaccessible to other boilers." Now, to fix a boiler 4 ft. 8 in. high, for nearly all the ordinary purposes of horticulture, a stoke-hole from 7 ft. to 8 ft. deep will be required; and as the diameter is given at 2 ft. 4 in., exclusive of the inlet (flange-pieces, I suppose), the stoke-hole will require to be 8 ft. square, and then there will be little room to stoke the fire or to store fuel. Therefore, after all, both labour and brickwork will be required. Insomuch as this boiler "consumes its own smoke," we have a really legitimate advantage, and the Messrs. Green deserve our warmest thanks for conferring so great a boon, which, I am inclined to think, will be even more appreciated than the economical advantage; although this latter is, as stated, of considerable importance in many places. The 6th advantage looks better than it will be in reality. When it becomes necessary to replace a defective boiler, the no-brickwork boiler will have the best of it; but unless there is a spare boiler in stock, it will be nearer the truth to say it can be replaced in two days.

I cannot but think, therefore, that the advantages claimed for this boiler are more specious than real. Boilers with a brickwork setting gather about them an accumulation of heat, that boilers without brickwork cannot have; and the disadvantage of this will be felt when the fire has to be relighted, and the sweating peculiar to all iron stoves takes place.

This boiler has, I think, another disadvantage irrespective of the setting. I would have nothing to do with any boiler that required to be supplied with fuel from either below, or in front. I do not say that the existing boilers fed at the top are perfection, but they are right in principle; their depth is the great drawback to their being generally used, and I am surprised that the intelligent makers of tubular and other boilers that are supplied at the top, do not reduce the height, and increase the heating surface, by making the tubes larger. Those who have not had the care of tubular boilers can have no idea of their simplicity, and the comfort they are to the firemen who look after them. We have some fixed here, and with the best results. They are only drawn and have the clinkers taken out of them, once a day, just before it is necessary to put the fires on in the afternoon, when it can be done with ease; while the old-fashioned front-fed boilers require to be clinkered nearly every time fresh fuel is put on.

My object in these remarks is to show that it is not worth while to run too eagerly after every novelty that is produced. It has been said of wives, "there is but one good one, and every husband has her": so it may be said of boilers, there is but one good boiler, and every maker is the fortunate possessor.

Stansted Park. GEORGE THOMSON.

CONIFEROUS TREES IN SHRUBBERIES.

THE planting of Coniferous Trees amongst low-growing shrubs ought to be followed out with much caution, as the influence which the roots of such trees exercise on the growth of the surrounding shrubs is very great, and in many instances pernicious, a fact which ought to have considerable weight with all who plant with a view to ultimate effect and usefulness.

It cannot be denied that a very pleasing and even imposing effect can be produced at once by an admixture of fine young Coniferous trees with low-growing evergreen and deciduous shrubs; but if the preservation of a thick undergrowth, either as a screen or for shelter, is considered an object in future years, none but the more delicate and smaller-growing sorts should be introduced. There are plenty of such varieties, suitable in every way for effect, which it is easy to keep within reasonable bounds; but such strong-growing sorts as the Deodar and Cedar of Lebanon, Pinus insignis, Abies Douglasii, Picea Nordmanniana, and others, of which the Silver Fir is the type—in fact, all those kinds which under favourable circumstances are likely to grow into timber, should either be planted in groups and as single specimens in parks, or as single specimens on extensive lawns; or, if considered indispensable for the sake of ultimate effect, in shrubberies, or belts, or screens, they should be confined entirely to the background, and never brought so prominently forward as to interfere with the well-doing of the undergrowth, in those cases where the maintenance of that undergrowth is indispensable in future years. I am quite aware that they are so very beautiful in their young state, that the temptation to use them for the production of immediate effect in shrubberies, as a contrast, is almost irresistible; but, in one way or another, they entail so much disappointment in after years, that unless planted with an ultimate object, they should be entirely rejected from such prominent situations. If brought within a near view from the windows of the mansion, they will not be many years in growing into nuisances, as interfering with more distant views; so that just when they are becoming noble specimens, they must be removed, or they will eventually kill everything around them. Many of us know this to be almost heart-breaking work; and it proves the position with which I set out, namely, that very great caution should be exercised in choosing the sites for such trees, in the first instance.

I think a few words may be said in favour of those who planted trees such as those I have mentioned forty years ago, or thereabouts, as most of them were then so rare and valuable, that it is no wonder they were placed in the choicest situations on lawns, and even in mixed flower-beds, where they could be constantly under the eye of the proprietor, no thought being then given as to the future effect; but now their adaptability to the climate and their strong-growing habits are so well known, that such mistakes ought not to occur.

The evil of planting such trees in mixed shrubberies designed to be permanent screens is very great, for eventually, as they increase in growth, the roots take such wide and extensive ramifications, that they suck up all the nourishment from the surrounding soil, so that the shrubs cannot hold their own. It may well be conceived that this evil increases annually, so that the undergrowth gradually dwindles away, and eventually dies. This state of things is often sought to be remedied by grubbing up the old stumps, and trenching and enriching the soil and then replanting; but this is a fine thing for the Conifers, the roots of which seize upon the new soil with the greatest avidity, and in the course of a couple of years ramify through its whole extent, so that without liberal surface-dressings annually repeated, the shrubs will again dwindle away; and though by the use of such dressings they may be retained for a number of years, yet eventually the shade of the spreading branches, and the manner in which they contribute to carry the greater portion of the rain-water to their extremities, will effectually prevent any shrubs from growing in the immediate neighbourhood of the stems of the trees. In places of limited extent, this often becomes a serious evil, to be guarded against by the planters of the day.

Where such trees must remain, it will be found that grass will not grow under them, and yet a constantly green surface is indispensable. The best plant I know for furnishing this is the Irish Ivy, which will run over the ground, and being annually nourished by the falling leaves, will grow luxuriantly, and form a thick and permanent evergreen covering. I know no other plant which will grow so well under Coniferous trees, and it is very easily kept within bounds.

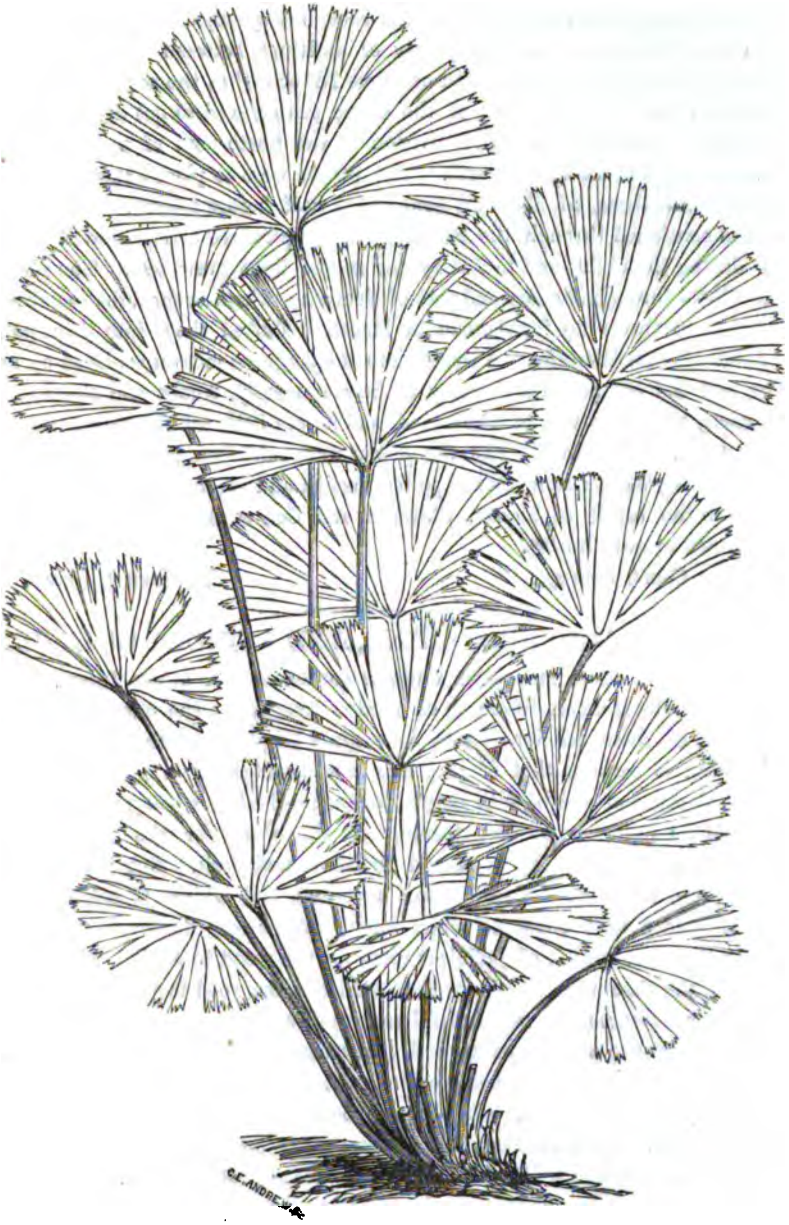
Redleaf. JOHN COX.

ACTINIOPTERIS RADIATA.

NO difficulty need be experienced in the cultivation of this lovely little Fern, when the botanist's notion that it is found growing on dry banks and such like places, and this too in very hot parts of the world, and that, "therefore, the water-pot and syringe must be very cautiously applied," is consigned to oblivion.

On receiving from India two small dry stems about the size of a horse bean, and some spores, I potted the one, and sowed the other, and placed them in the Indian division of the orchid house. To my great delight, both plants and spores germinated, and leaves were formed. They started well. The spore plants, 47 in number, were "potted off" in fern fashion; the two old plants were watered sparingly, but soon some of the first-made leaves began to die. I still watered carefully, but the leaves continued to turn brown and die, till one plant appeared to be gone to rest for ever. The other kept its fronds better, probably owing to its having a little more moisture—perhaps from a small piece of sphagnum moss or loam having found its way into the pot. In a week or two, the leafless plant threw up again, and as quickly went down; this was repeated three or four times during the winter, and in spring I satisfied myself the plant was quite exhausted and dead. I was also perfectly satisfied that it was owing to a want of knowledge on my part. The young plants, too, began to die rapidly, so that I feared our collection would soon be *minus* the Actiniopteris, and I thereupon resolved to adopt a moister treatment, the result of which was satisfactory.

By this time I had lost 40 of my 47 young plants, and one of the two old ones. While the remaining seven were quite healthy, I broke up some crocks and charcoal in equal parts, and small as peas, and put with them a good bit of silver sand, and a very *small* portion of loam and peat, only sufficient to set this



rough sharp compost; and, half filling some "tall thumb-pots" with small crocks, I potted the plants singly into them, and placed them into the same house, in a mean temperature of 73°. This was done in March, and I never afterwards allowed them to get dry at the root, but syringed them two or three times a day, taking care to keep plenty of moisture between the pots. The temperature was increased to a mean of about 78° or 80° as the season advanced, and through the summer no part of the house was allowed to get dry, but each day fresh air was admitted. The division is the north end of a span-roofed house, standing due north and south. The plants were so placed that no direct sun could reach them, till about an hour and a half before setting. This treatment was continued through the summer, the temperature being allowed to fall to 68° during the night, and to 73° by day as the light grew less. The plants rested a little through January and part of February, when, as the light increased, they began to throw up fronds, and in March I shifted them into 3-in. pots, half filled with small crocks. A small piece of sphagnum moss was placed on the crocks, and the compost used nearly as before, namely, crocks and charcoal in equal parts, a good portion of white sand, and a very little soil, mostly little bits of turfy loam. On June the 2nd the plants were exhibited at the Royal Horticultural Society's show in a state of perfect health and vigour. They have since passed into the hands of Messrs. Standish and Co., of Ascot, and I learn that they are still in good health.

Melchet Court, Romsey. WILLIAM J. CROSS.

HINTS ON PEACH, NECTARINE, AND APRICOT CULTURE.

ALTHOUGH there may exist amongst gardeners and others interested in Horticulture much difference of opinion concerning the out-door cultivation of these delicious fruits, in respect to planting, training, &c., one thing is certain, that if they are not planted in a good border of sufficient depth and width, with ample drainage—the latter being very essential as regards its influence on the ripening of the wood for the winter—they will fail to produce healthy wood and well-flavoured fruit. But there is one point besides, to which I would direct attention, and which, if not regarded, the best border that could be made would not prevent disastrous results. I allude to the not allowing of sufficient room for the wood to swell. The nailing or tying in the shoots too closely, or the permitting the wood to grow hard against the nails or ligatures, are very fruitful sources of canker and gum. The latter, oozing out from the affected parts, will sometimes so seriously injure the shoot or branch as to necessitate its being entirely cut out; and this will not only cause an unsightly gap in the tree, but will also derange the proper balance between root and branch. I am confident that if more attention were given to this point, the cultivator would be well repaid by securing clean healthy wood.

Moreover, fruit-tree borders ought not to be cropped annually—nor should vine borders. If anything is permitted to be grown upon them, it should be Strawberries, and even if these are kept elsewhere it will be the better for the trees. I have known the Moorpark Apricot and other varieties planted in good, wide, and deep borders, which have been cropped with vegetables, &c., grow on to be large trees so as to cover a wall 12 ft. high, and yet they have completely died to the ground in the space of three years. I have seen some of the same sorts planted where they have only had about a three-feet border, some not even that, and where there has been a continual traffic over the roots, so that the surface has become almost as hard as a flagstone; and yet not only have these trees grown freely, not dying off by wholesale like the others, but they have produced fruit in the proportion of six to one, compared with the trees planted where the borders have been surface-cropped. Nor has the fruit in these cases been small in size and poor in quality, but, on the contrary, large and luscious, and all that one could expect or desire from an open wall.

Heigham. J. S. Kent.

ON PROTECTING AND SEEDING TULIPS.

THE season being now somewhat advanced, I propose to refer to my mode of protecting the beds, and to the treatment of the plants up to the time of their coming into bloom. The present autumn and winter has been rather an unusual one. The great quantity of rain, together with a continuation of south-west winds, and so little frost, has caused vegetation to go on at a rapid rate, more particularly in bulbous roots. My own Tulips, as well as others, so far as I have seen and heard, are at this time (February 16) farther advanced in growth than our older growers have usually seen them by the third week in March. In consequence of this, I am led to believe that those who wish to secure their bulbs, and to excel in their bloom, require to exercise more than ordinary caution and care. Those who have had the opportunity of keeping off the heavy rains, and preventing their beds from becoming saturated with wet, will find they are best off, for their plants will be later in coming up, and much hardier than those in beds which have had to endure all the soaking rains which have fallen from planting time to the present. The bulbs and grass of such as are above ground are at this time four-fifths water, and if the wind should suddenly turn to the north or north-east, we may expect and yet experience some severe frosty nights and cold days. Be this as it may, it is better to be on our guard, for, depend upon it, a single night's severe frost will not only destroy the fine grass or herbage, with the buds and blooms, but it will greatly injure, if not also destroy, the bulbs. So long as the wind continues in the south-west quarter, all may be well. Although I advocate protection for Tulip beds, I also advise, as well as practise, giving the beds, from the time of planting up to the time of blooming, the full benefit of all fine seasonable weather. Like most other flowers, Tulips are the better for all the sun and air which it is possible to give them; but the more we can cover and protect against soaking rains and that most destructive enemy, frost, the better for the colour and fine style and perfection of marking of the flowers, besides which, we may expect sound, healthy bulbs at lifting time.

I will here add a few hints on my latest practice in seed-taking. First of all, when the flowers are tolerably well in bloom, I select a few of such as I consider most likely to form good female parents, and others to fertilise with, and watching the opportunity when the one flower is in readiness to receive the pollen from the other, I carefully take off with a small pair of tweezers, such as are used for dressing Carnations, &c., four out of the six anthers; I then take one, or more if required, from the male flower, and apply it to the stigma of the other. That is all that is required; only the flower must be caught at the proper time, for when once the pollen is applied while the stigma is open it is sufficient; in two or three hours after it will turn of a pinkish colour, and close up, so that neither bee nor anything else can interfere with its inoculation. To get really choice seeds, choice and first-class flowers must be made use of. The time for rearing seedlings from inferior flowers is gone by. There are opportunities now for those who may have the inclination to engage in seedling raising, such as no one had thirty or forty years ago. We have new flowers now which possess almost every requisite property, and which by some of us are thought to have almost reached perfection. Such as these are now-a-days in the market, and may be purchased at one-fifth the price which had to be paid formerly for sorts with which we would not now cumber our gardens. At the present time we are numerously supplied with first-class Bizarres, both of those termed darks and reds, in my opinion sufficiently so to admit of dividing them, and thus to make two classes. That is a subject which requires to be settled, and which I should like to see adopted at our next national exhibition.

I particularly advise those who intend to try their hand at seedling raising, to be careful to cross or impregnate with the same colour, viz., a Rose with another Rose, a Byblömen with a Byblömen, a Red Bizarre with another Red Bizarre, and a dark Bizarre with a dark Bizarre; for with every care we can use, there will be plenty of the tricolors, and others belonging to no particular class.

Huddersfield. JOHN HEPWORTH.

THE CULTIVATION OF ALPINE PLANTS.

FEW things are, generally speaking, worse cultivated than are Alpine Plants. Even the most successful exhibitors are apt to look, about a day before a show, for the best flowering cuttings of such things as Iberis Pruiti, and sticking four or five of these into a pot, present that as a "specimen." Now, what is so easily grown into the neatest of real specimens as an Iberis? By merely plunging in the ground a few 6-in. pots filled with rich soil, and putting in them a few young cutting plants, they would, "left to nature," be good specimens in a short time, while with a little pinching, and feeding, and pegging-down, they would soon be fit to grace any exhibition. So it is with many other things of like habit and size—the dwarf shrubby Lithospermum, for example; a little time, and the simplest skill, will do all that is required. From amongst such things as the foregoing, with dwarf shrubs like Andromeda tetragona and fastigiata, the Menziesias, and Gaultheria procumbens (such things in peat soil, of course), the choicer Helianthemums, Acantholimons and dwarf Phloxes, like verna and subulata, neat dwarf exhibition plants, might be provided pretty enough to satisfy even the most fastidious growers of New Holland plants.

Of course, no one with the slightest knowledge of gardening would read, if I attempted to write down, how to grow such free-growing plants as the Aubrietias and the like; and yet to have them in perfect condition for showing, they ought to be prepared in time, so as to secure well-furnished plants. Such vigorous subjects, to merit the character of being well-grown, should fall luxuriously over the edge of the pots, and in all cases as much as possible of the crockeryware should be hidden. The dwarf and spreading habit of many of this class of plants would render this a matter of no difficulty. In some cases it would be desirable to put a lot of cuttings or young rooted plants into 6-in. pots, so as to form specimens more quickly. Pots of 6-in. diameter suit well for growing many subjects of this intermediate type; and with good culture, and a little liquid manure, it would be quite possible to get a large development of plant in such a comparatively small pot, but if very large specimens were desired, a size larger might be resorted to.

To descend from the type that seems to present the greatest number of neat and attractive flowering plants to the cultivator, we come to deal with the dwarf race of hardy succulents, and the numerous minute Alpine Plants that associate with them in size—a class rich in merit and strong in numbers. These should, as a rule, be grown and shown in pans: they are often so pretty and singular in aspect, as in the cases of the little silvery Saxifragas, that they will be attractive even when out of flower, while the flowers are none the less beautiful because the leaves happen to be decorated in an unusual way. Many of the same type, as Erpetion reniforme and Mazus Pumilio, must be shown in good flower. All these little plants are of the readiest culture, in pans, with good drainage, and light soil. Of course the ready way to form good specimens of the most diminutive, is to dot young plants all over the surface of the pot or pan at once.

We have next to ascend to the larger type of Alpine and Herbaceous Plants, beginning with such as the Aquilegias, and rising to the finer Phloxes, Pentstemons, &c. These have not yet, any more than the preceding classes, been seen at our shows in anything approaching to proper condition, though the cultivator who can grow a good specimen of the Chrysanthemum should have no difficulty with them. The will, and the place, and a little timely preparation, are all the requisites; but as the grower of the most quickly-raised specimen of a soft-wooded plant, must devote thought to his work at least twelve months before he stages his plants, so must he who wishes to succeed with the chief beauties of the hardy class, prepare in time. Indeed, to the plantsman that is all that need be said. In this group, larger pots and richer feeding will be necessary.

In each of these classes the great majority of the plants will be found as appreciative of good culture as a show Pelargonium. The best position in which to prepare the plants would be some open spot near the working sheds, where they could be plunged in coal ashes, and be under the eye at all times. And as they should show the public what the beauty of hardy plants really is, so should they be grown entirely in the open air in spring and summer. To save the pots and pans from cracking with frost, it would in many cases be desirable to plunge them in shallow cold frames, or cradles, with a northern exposure in winter; but in the case of the herbaceous kinds, a few inches of some light protecting covering thrown over the pots when the tops of the plants have perished, would form a sufficient protection. W. ROBINSON.

NEW FLORISTS' FLOWERS.

THE marked improvement effected in the Chinese Primrose within the past few years was abundantly illustrated at the meeting of the Floral Committee on the 16th ult., when some very fine forms of this popular flower were exhibited. Foremost was a truly magnificent strain of what is popularly termed the red Primula sinensis. The depth of colour, which was a lively rose-purple hue, was something remarkable, while the flowers were very large, very stout, and had showy lemon centres; the habit of the plants, moreover, was stout and robust. The Committee deservedly awarded a first-class certificate to Mr. Williams for this superb strain, which was named *rubra grandiflora*. A white Primula of an extremely novel type came from Mr. W. Paul. So pure was the colour, that it might be correctly termed snow-white, and there was this noticeable about the plants, that the leaf-stalks and flower-stalks were both of a reddish hue, the latter being tall, surmounted with a bold truss of flowers, and thrown up high above the foliage, which was more cut at the edge than usual. There is no doubt that these novel types of Primulas have the capacity to reproduce themselves from seed; so that on the ground of its undoubted novelty, and fine qualities, this latter strain also should have been awarded a first-class certificate.

Messrs. Windebank and Kingsbury, of Southampton, to whom more than to any others we are indebted for the variation now observed in the Primula, also staged a collection of their flowers, though the long journey had sadly marred the beauty of many of the finer varieties. Some twelve or fourteen years ago, these growers took the Primula in hand, and it was they who were first successful in raising flaked flowers,—flowers mottled and striped with purplish rose or pale violet on a white ground. This season, a most decided step forward has been achieved by them, in the production of flowers striped with rose—in some instances the colour approaches scarlet. In the hands of Messrs. Windebank and Kingsbury, the old types of the rose and white Primulas have changed into some ten or twelve distinct types of variation, all more or less beautiful. In point of size and in massiveness, the flaked flowers are yet behind the white and rose-coloured types, but each year finds them gradually increasing in quality in these respects. In point of constitution, also, the plants lose nothing in comparison with the older types of flowers. It is noticeable that, as in the case of Mr. Paul's pure white type, all flaked flowers are produced on plants having red leaf-stalks and flower-stalks, though white may be regarded as the ground colour of the flowers, and that the flower-stalks are taller than usual.

In the production of double flowers Messrs. Windebank and Kingsbury have been especially successful. All their double flowers are raised from seed saved from single flowers, subjected to a method of impregnation which they keep to themselves as a kind of trade secret. To two of these double novelties first-class certificates were awarded, viz., *Miss Kingsbury*, white, flaked with bright rose, a novel and beautiful variety; and *Snowflake*, with pure white flowers, large and double, that become suffused with blush as they age. R. D.

MONTHLY CHRONICLE.

THE Thames Embankment has been planted with a line of trees on the northern side, and thus at length our much abused metropolis bids fair to have a promenade worthy of the name. The tree selected is the so-called Western Plane, the same as that grown in the streets of Paris. The trees have all been obtained from the Continent, and are planted at distances of 40 ft. apart, with smaller trees intervening. Mr. McKenzie at one time intended to plant Planes and Black Italian Poplars alternately; but, owing to the difficulty in getting trees of a uniform size, this arrangement was abandoned. The permanent trees are placed in pits 9 ft. square and 6 ft. deep, filled with 1 ft. 6 in. of brick rubbish, the remainder, in equal proportions, of good garden soil—soil from the pit when suitable, and turfy loam from Barking Creek.

—— THE collection of Phalænopsis in Mr. R. Warner's garden at Broomfield affords just now a display which is probably unequalled in Europe, some of the specimens being of very fine growth. They are arranged to form a floral avenue nearly 100 feet long, extending the whole length of the East Indian house. There are upwards of 1,100 open flowers, consisting of P. Schilleriana in variety, some of them being very superior forms; P. grandiflora, and its splendid variety, aurea; P. amabilis, of which there are also several varieties; and the rare P. intermedia Portei.

—— THE following case will be reassuring to those who fear their Aucubas will not bear fruit without artificial aid:—A gentleman living near Kensington Gardens has some very large Aucubas. During his tour in the autumn of 1867 he purchased a male plant, and plunged the pot in the border near to his large plants. In the flowering season the bushes were almost covered with bluebottle flies, of which no particular notice was taken, nor was any idea formed as to what they were doing; but one day he was agreeably surprised to find his large bushes covered with berries, fast turning red, thus proving that artificial impregnation had not been necessary.

—— BY far the most important plant (writes Mr. Forsyth) for Planting Game Preserves on dry poor land, infested with rabbits, is the common Bracken or Fern (Pteris aquilina), which, carrying its rhizomes underground, maintains its hold against all comers, and if not evergreen, is always there, either green or brown, ready to hide and shelter the Game. A quantity of ripe Brackens taken into the preserves in autumn, and there allowed to rot, will not fail to secure eventually a crop of stalwart Fern to fill up all vacancies. The spores will be thus supplied in thousands, and if the land is not disturbed they will establish themselves, and, after a time, become masters of the situation.

—— The Cocoa Plant (Theobroma Cacao) has just produced fruit in the Glasnevin Botanic Garden, being the first instance recorded of its fruiting in Ireland, and almost the first in Great Britain. The plant is some six feet high, and bears the fruit on its trunk near the base.

—— The word Bouquet, as we are accustomed to see it spelt, is a French perversion of two Tartar-Arabic words, *bo*, beautiful, and *ka*, perfume; hence, the original meaning is anything which possesses a beautiful perfume. In like manner, the luscious Tokay wine (of which the Austrian Emperor is reputed to be as fond as the King of Prussia was of Champagne), is indebted for its name to the two Arabic words, *to*, royal or imperial, and *ka*, perfume. When, therefore, connoisseurs speak of their wines having a "beautiful bouquet," they are correctly using the word in its original sense, but they are incorrectly and unwittingly using the adjective twice, first in English, and then in Arabic.

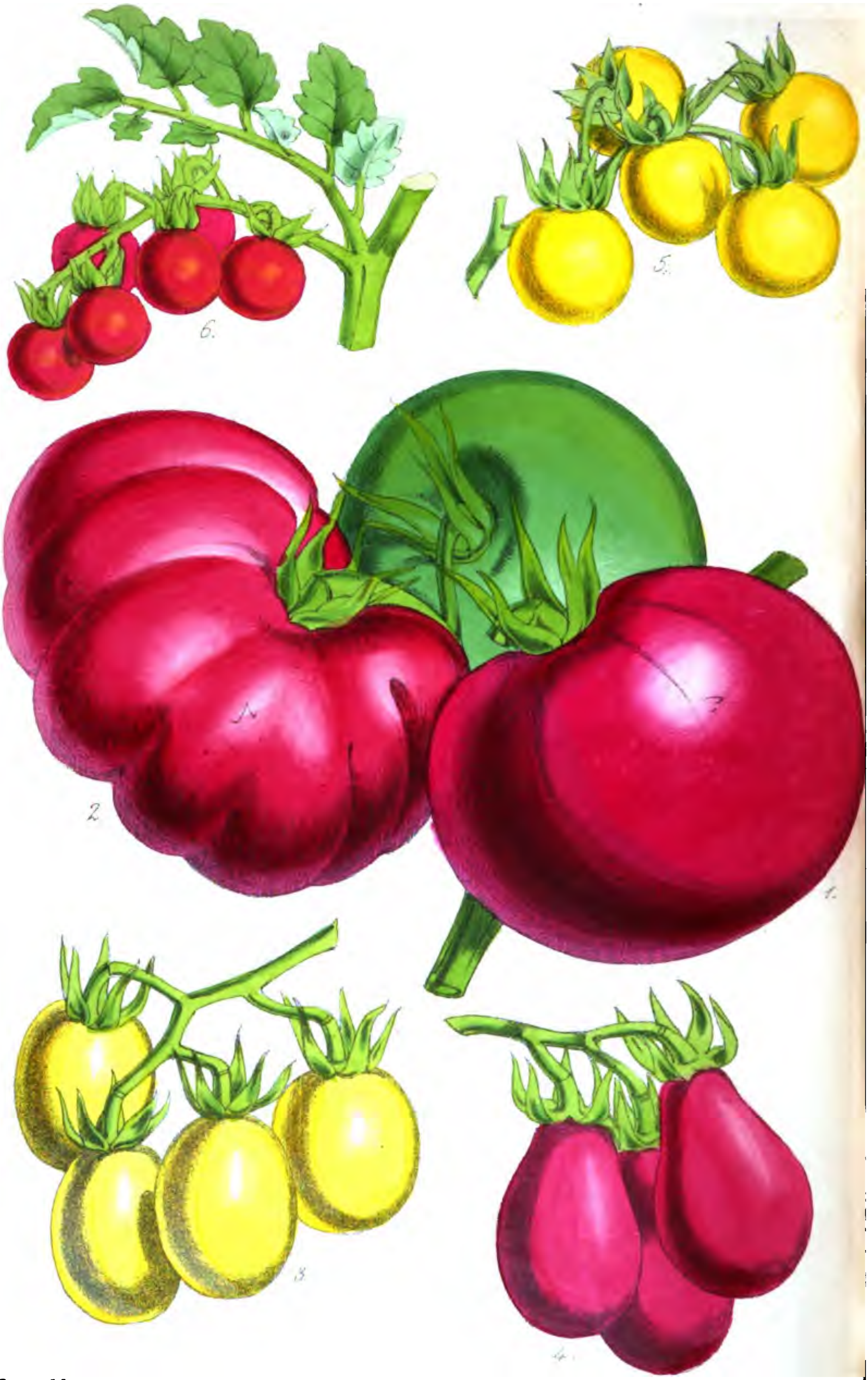
—— During the past autumn, Messrs. Rivers and Son, of Sawbridgeworth, sent to South Kensington some remarkable examples, varying from about 18 in. to 2 ft. high, of Dwarf Apple Trees on the English Paradise Stock. The number and size of the fruit with which they were laden were extraordinary, Mela Carla, Coe's Golden Drop, and Stamford Pippin having each from six to eight fruits, Calville Blanc a dozen, and the beautiful Pomme d'Api nineteen, and there had been several more on the trees. The advantages such small trees offer to those who have but a small extent of garden ground are very great. They are, of course, the result of working on a dwarfing stock. This subject of Apple Stocks in connection with Cordon Trees has latterly excited much discussion, but no satisfactory conclusions can yet be drawn, as it is clear that by the Pommier de Paradis, or French Paradise Stock, the disputants are not all speaking of the same plant. This Stock question is to be put to the test at Chiswick.

—— The whole mystery as to the falling off of Camellia buds (writes Mr. Barnes,) lays in a nut-shell. At Bicton the outdoor plants, with thick, dark-coloured leaves and plump fleshy buds, are exposed to wind, sun, and rain, and never in the least protected. The indoor plants bear foliage and buds of a still more luxuriant character. The outdoor plants get at all seasons all that drops from the heavens. The indoor plants are abundantly supplied with soakings of water, the engine being set to work freely amongst them, morning and evening, so that during the growing season they are deluged, and manure-water and soot-water are freely applied. These simple facts, he thinks, show conclusively that bud-dropping is caused by stint of moisture; and that herein may also be found the explanation of deficiency of bloom-buds.

—— Young Gardeners, and old ones, too, for the matter of that, would do well to read, and mark well, the following monition:—"A man, now-a-days, must have something of the steam-engine in him. A lazy, snail-paced fellow might have got on in the world fifty years ago, but he won't do in these times. We live in an age of quick ideas; men speak quickly, think quickly, and slow-coaches are not tolerated. Be up and dressed always—not gaping and rubbing your eyes, as if you were half-asleep, but wide-awake for whatever may turn up, and you may do something before you die. Think, plan, reflect as much as you please before you act; but think quickly and closely, and when you have fixed your eye on an object, spring to the mark at once."

Obituary.

—— Mr. George Jackman, sen., of the Woking Nursery, died somewhat suddenly on the 12th of February, from syncope, following an attack of gout. The nursery, which was founded by his father about sixty years ago, has been most successfully carried on since 1830 by the late Mr. Jackman, latterly in association with his son, Mr. G. Jackman, to whom we are more especially indebted for the hybrids of Clematis. Mr. Jackman was in his 68th year.



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Tomatos.

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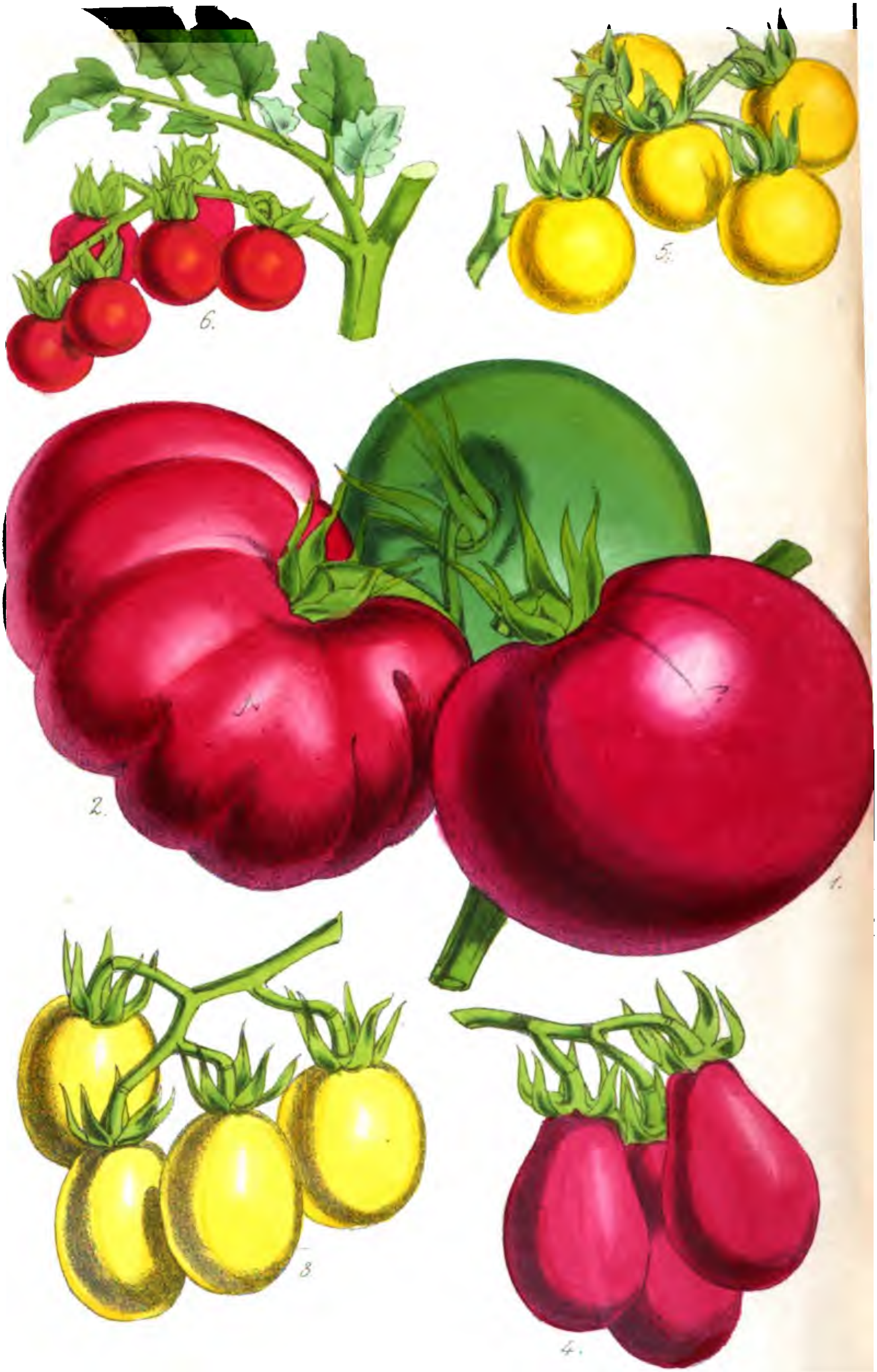
6. Currant (Solanum racemigerum)



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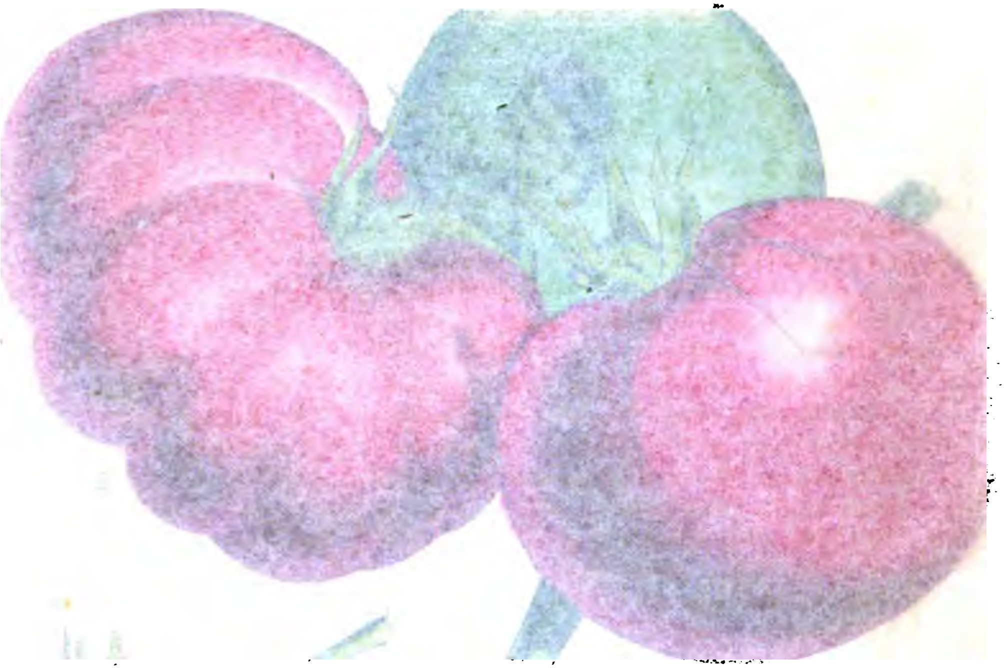


ORNAMENTAL VARIETIES OF TOMATOS.

WITH AN ILLUSTRATION.

GROWN in pots, the Tomato makes a very handsome decorative plant, the Cherry, Plum, and other small-fruited sorts especially so. Few plants are more strikingly ornamental in the Autumn months than these, when well grown and laden with their numerous clusters of brilliantly coloured fruits. As the ornamental character of these smaller-fruited sorts is not commonly known or appreciated, we have thought it desirable to furnish our readers with coloured representations of some of them.

There is little to add by way of description to the account given of the various sorts of Tomato in a recent volume of our former series (1867, p. 238), but we may here indicate the special peculiarities of those which have been selected for illustration. Fig. 1 represents the FEEJEE ISLAND TOMATO, which is remarkable amongst the larger sorts for its decided crimson colour, and for the slightly marked ribs which occur near the base of its fruits. Fig. 2 shows the ORANGEFIELD TOMATO, which is the same as the Large Red Italian, and is a very excellent culinary sort, and remarkably prolific. Fig. 3 shows the YELLOW PLUM TOMATO, a strikingly ornamental variety, the fruits of which are about the size and shape of a damson. Fig. 4 represents the PEAR-FORMED TOMATO, which is red, and of rather larger size than the plum-shaped, Fig. 5 is the YELLOW CHERRY TOMATO, whose still smaller spherical yellow fruits, equally with those of the red-fruited form, are produced in great abundance, and have a very attractive appearance. The three latter sorts are especially recommended for the great beauty of the plants, when well-grown, and full of fruit. They may be successfully grown in pots for house decoration, and their quality is quite equal to that of the larger sorts from the utilitarian point of view.

The CURRANT TOMATO, of which a fragment is represented at Fig. 6, is the most ornamental of the whole series. In foliage and general aspect it resembles the ordinary kinds, but it is smaller and more slender, and the fruits grow in long, drooping racemes, of which the basal portion only is shown in our figure. These long racemes of fruit, of a bright red colour, give the plant a very beautiful appearance. Messrs. Vilmorin, by whom it has been distributed under the name of *Solanum (Lycopersicum) racemigerum*, give the following account of it:—This most ornamental species of Tomato has been received from M. Durieu de Maisonneuve, the learned director of the Bordeaux Botanic Garden. It is a veritable Tomato, the sub-climbing stems of which are very much branched, and bear a profusion of simple or divided racemes from 6 in. to 8 in. long, composed of from fifteen to twenty-five smooth, round fruits, disposed in two rows, and of a very bright scarlet colour, so as to give them a strong resemblance to clusters of red currants. It is a most interesting plant, which may be thoroughly utilized as an object of ornament, under the treatment given to the culinary Tomato.

In this country—to quote again the article already referred to—Tomatos are mainly used for making sauce or for stewing, and hence the varieties producing the largest fruits have been most esteemed. In warmer climates, however, as in the South of Europe and the United States of America, they are consumed to a much greater extent than with us, and are used in a variety of ways; among others, being much relished in the raw state as a dessert fruit. For this latter mode of use, as well as for the ornamental purposes already adverted to, the smaller-fruited kinds, to which our plate is chiefly devoted, are particularly adapted; and we trust that this special notice may be the means of bringing them into more general cultivation. M.

NOTES ON NEW PLANTS.

BIMONTHLY meetings and the monthly issues of botanical publications bring numerous novelties under notice. It will be our pleasant duty from time to time to note down a few particulars of the most important of these New Plants, such as are likely to occupy a useful place in our gardens. The early meetings of the present year have yielded several plants of high merit, in addition to the new florists' flowers which appear under a distinct heading. Not the least important amongst those already brought forward, is the *Spiræa* (Hoteia) *japonica variegata* of Messrs. E. G. Henderson and Son, a plant with the elegant habit and inflorescence of the green type, now so extensively used for forcing, but having the leaf-stalks red, and the leaflets traversed by cream-coloured veins, giving it a handsome pale golden reticulated variegation. Another fine variegated plant is the *Thuja Lobbii aureo-variegata* of Messrs. J. and C. Lee, a vigorous-growing shrub, in which the branches are freely interspersed with twigs of a rich yellow hue, giving the bush a finely golden variegated appearance. *Aralia peltata*, shown by Mr. B. S. Williams, is one of a fine group of handsome-leaved evergreen shrubby plants, exceedingly well suited for ornamenting halls, cool conservatories, &c.; this species has rather large, thick, deep-green, 3-lobed, or obscurely 5-lobed leaves on long slender brownish petioles, and is of a distinct character. Various forms of New Zealand Flax *(Phormium)* have been brought forward at the several meetings, and as they are all of a highly ornamental character, and suitable for cool conservatories, it may be worth while to enumerate them. First comes the broad, drooping-leaved plant taken as the type of *Phormium tenax*, of which there is also a variegated-leaved variety. Then comes a somewhat narrower and more rigid-growing form, which, under the name of P. Cookianum, has been confounded with P. Colensoi; and of this, which has now been authoritatively named *P. tenax Veitchianum*, there is also a variegated-leaved form in cultivation. All these become split at the point of the leaf. Finally, there is the much narrower and erect-growing *P. Colensoi*, synonymous with true P. Cookianum, whose leaves do not split down from the apex; and of this, also, there is a variety handsomely striped with white, and, judging from plants shown by Messrs. E. G. Henderson and Son, another having the leaves striated with pale green. From their evergreen habit and characteristic appearance, these all come into the front rank of ornamental greenhouse plants. Another class of highly characteristic greenhouse plants, the Agaves, now occasionally turns up at exhibitions, and seems to be making way in public estimation; we have here to record a highly interesting species from the collection of W. Wilson Saunders, Esq., of Reigate. It is called *Agave Besseriana hystrix,* and is a dwarf tufted plant, with erect leaves 4 in. to 5 in. long and ¾ in. wide, very glaucous, terminated by a strong black spine an inch long, and edged with smaller black spines, which produce a fine contrast.

One or two interesting Ferns have recently appeared. *Asplenium fernandezianum,* sent by Messrs. Veitch and Sons, and obtained from Montevideo, forms a neat tuft of gracefully arching fronds, with small incised obliquely-oblong pinnules, and a proliferous bud at the apex, and is a remarkably elegant evergreen species, well adapted for greenhouse culture; as also is *Todea hymenophylloides compacta,* from Messrs. Standish and Co., Ascot, a variety of that fine pellucid-leaved fern, which has come up plentifully amongst seedlings, and is so slow in growth, that with ordinary treatment, the densely grown plants are not in half-a-dozen years more than three inches high.

Turning to Orchids, the collection of W. Marshall, Esq., of Enfield, has yielded two remarkably fine varieties of *Odontoglossum triumphans.* One of them, called *Marshallii,* has the yellow sepals and petals blotched with brown, the latter being toothed at the edge, and the lip white, with a narrow yellow frilled edge, and deep brown tip, the prominent crest at the base having shorter lateral teeth. The other, called *Wilsoni,* is much smoother, the pseudobulbs looking as if polished, the flowers not toothed, yellow, with larger and fewer blotches of brown, and the lip scarcely frilled, and wanting the lateral teeth of the crests. The Assam *Dendrobium Williamsoni,* as shown by J. Day, Esq., of Tottenham, has pale yellowish flowers, with a dense orange spot on the lip; while the slender-stemmed Burmese *D. lasioglossum,* as shown by Messrs. Veitch, proves to be extremely beautiful, with its fleshy pure white flowers, having a beautiful yellow woolly crest, and rosy tints at the base of the lip; and *D. crassinode* is remarkable for its peculiar short knotty stems, and its white flowers, which are tipped with pale rose, and have a cordate lip deep orange at the base. *Lycaste Schilleriana* is a curious species, with the pseudobulbs and habit of L. Skinneri, but with long recurved olive-green sepals, and a white lip connivent with the small white petals. This came from Mr. B. S. Williams. The rare *Lycaste gigantea,* with immense tawny-green flowers on very tall scapes, has been shown in fine condition by Messrs. Veitch. Finally, from the same collection as the last, *Cypripedium Harrisianum,* one of Mr. Dominy's fine hybrid Orchids, has been produced. This is a cross between C. barbatum and C. villosum, and is a very handsome plant, with the leaves green, mottled with deeper-coloured blotches, and the flowers olive-green, with a striated pale-edged dorsal sepal, brownish petals, stained with purple, and a dark purple lip.

Turning from shows to books, we find a few striking subjects to record. The true *Vanda insignis* (Bot. Mag. t. 5759) has been at last obtained from the Moluccas by Messrs. Veitch and Sons, and is a beautiful species, with unequally abscised leaves, and rich brown chequered flowers, having a saucer-shaped pale rosy-tinted lip. *Brassia Lawrenceana longissima* (Bot. Mag. t. 5748), a Costa Rica plant flowered by W. W. Buller, Esq., of Strete Raleigh, is a magnificent epiphyte, with the deep orange-coloured sepals seven inches long, and marked with broad purple blotches, the petals and lip about one-third of the length, and the latter pale yellow, spotted near the base. In *Cœlogyne Reichenbachiana* (Bot. Mag. t. 5753) we have a beautiful new species of the Pleione group, remarkable for its large, depressed, and reticulately-coloured pseudobulbs, and its handsome pale rosy-tinted flowers, having the lip richly spotted with purple, crimson, and ciliately toothed; it was sent by Colonel Benson from the extreme eastern part of India, and has been flowered both by Messrs. Veitch and at Kew.

We find illustrations of two fine conservatory climbers, *Tacsonia eriantha* (Bot. Mag. t. 5750), and *Cobœa penduliflora* (Bot. Mag. t. 5757). The first of these resembles T. mollissima, but has the under surface of the leaves woolly with white hairs; the flowers are rose-pink. The Cobæa is a very singular and graceful climber, with pale green leaves of about two pairs of oblong leaflets, the mid-rib running out into a long pointed tortuous tendril; from the axils of these leaves issue the long-stalked flowers, which are yellowish-green, bell-shaped, but cut at the edge into narrow, pendulous, wavy, strap-shaped lobes 3-4 in. long. It comes from the mountains of Caraccas, and has been flowered at the cool end of the palm stove at Kew.

Among hardy subjects, a lovely little rock plant from the European Alps, where it grows in strongly calcareous soil, is the *Iberidella rotundifolia* (Bot. Mag. t. 5749), a dwarf tufted herb, with obovate entire leaves, and rosy-lilac flowers with a yellow eye, and half an inch in diameter, collected into crowded erect cylindrical racemes. M. Van Houtte, in the last number of his *Flore*, figures the ornamental *Cerasus Caproniana ranunculiflora* (Flore t. 1805), a variety which supersedes all other double-flowered cherries in the extreme fullness of its large pure white flowers, and in the regularity with which the petals are disposed. It is grown in some French gardens under the name of C. Rhexii, and in Holland under that of C. flore-pleno nova. From the same source we learn of an *Ilex Aquifolium ciliata aureo-marginata* (Flore t. 1811), which is one of the most beautiful of dwarf shrubs, the pigmy of the genus. It is said to be of Belgian origin, and to be as hardy as its type; but the elegant, narrow, spine-toothed leaves are beautifully variegated with a broad golden margin, and hence the plant forms one of the prettiest of all dwarf variegated evergreens. M. Van Houtte quaintly observes that it would make one of the prettiest hedges in the world, though to realize the full effect one might have to wait a couple of generations—a mere bagatelle! M.

WHITE CALVILLE APPLE.

THIS is a fine Apple, and the trees are of vigorous habit, both on "paradise" and "free" stocks, but why it should have been so much cried up of late years completely puzzles me. It is good in flavour! Yes! I don't object to that. It is delicate in texture! Yes! I will admit that. It is peculiar in shape! Yes! this is another of its recommendations, and not the least commendable in these times, when appearances are accepted for so much; but it bears no comparison with Bleinheim Orange or Ribstone Pippin, with Cockle Pippin and Gooseberry Pippin, or with a hundred more excellent English and American Apples which keep sound and retain their flavour and appearance to the last, without becoming discoloured, spotted, and rotten at the core. White Calville Apples at 1s. 6d. and 2s. 6d. each, are too dear. The same price per dozen is more equitable, according to my notions of comparative merit.

Jersey. C. B. S.

ATACCIA CRISTATA.

SOMETIMES I am asked why I have such a fancy for growing curious-looking things. My answer is, that the wonderful and singular forms of the Vegetable Kingdom are equally deserving of attention with those that are clothed in the most attractive and beautiful colours,—even more so, for they possess a beauty of their own, and always command the attention of even the least observant. There is probably no plant in the whole vegetable kingdom that produces more singular flowers than Ataccia cristata. It is not easy to describe it, and the other members of its family, to those who are unacquainted with botany, since they differ essentially from all other plants. When not too much shaded, and grown near the glass, the whole flower (except the drooping sterile peduncles, which are white) is purple, of different shades, the erect portion of the involucre much paler than the other parts, and wonderfully transparent. The inflorescence altogether has a most singular appearance.

This Ataccia is a native of the Malay Islands, and is found in swampy places. Hence it requires a strong heat, and a constant and abundant supply of water—though it must never be too much drenched, or its roots will rot even in the most porous soil—accompanied by efficient drainage. The best fibrous peat should be used for it, with sufficient sand and broken crocks in the soil to let the water drain off freely. I find it is impatient of too much pot-room: an 8-in. or 10-in. pot will be sufficient for a large plant. It will stand as much heat in summer as any plant in cultivation,—not that it absolutely requires so much, but when so treated it makes greater progress, and will bloom three times in the season. The flowers last in perfection for a fortnight. It enjoys a light situation, but must be shaded from bright sun. It should never, even in winter, be subjected to a lower temperature than 60°.

Those who may wish to procure a plant should do so in the summer, for if it has to travel any distance during cold weather and it is out of heat for even one night, the chances are that it will be killed. In February or March it ought to be repotted, using in the case of small plants pots 2 in. larger than before, and in all cases removing as much as possible of the old soil, which has a tendency to become sour. Although it has been long in the country, the plant is still scarce. It throws out suckers from the base of the stem, which root freely if inserted in a mixture of peat and sand; but I find it a better plan to cut the plant off just above the suckers, and treat it as a sucker. It will soon root, and receive very little check.

One thing in its favour is that it appears to have a perfect immunity from insects, for I have grown it for 15 years, and have never seen a single insect upon it. It is better not to syringe overhead, as water lodging in the base of the petioles will sometimes cause the plant to rot. T. BAINES.

Summerfield, Bowdon.

THE OAK-LEAF SILKWORM.

OF Silkworms there are many varieties, but in a profitable point of view the mulberry breeds stand first. I propose, however, now to offer some remarks on the newly introduced Oak-Leaf Worm, Bombyx Yama-mai, which is a most interesting insect, and is also likely to become a useful one. This Bombyx feeds on oak leaves, and I think the Turkey variety is the best. Its eggs are as large as radish-seeds, and of a dark speckled colour. The worms attain a large size, and the moths are exceedingly handsome. The cocoons are about the size of pigeons' eggs, and produce good silk.

In order to rear a few of these Silkworms half-a-dozen young oak plants in large pots should, about March or April, be put into a vinery in order to force them into leaf. They can then be brought indoors about the beginning of May, and the eggs may be placed among the boughs, in little thimble-papers. As many pots should be prepared as may be wanted to carry the worms through their whole life. They could be distributed one worm to each plant, so that the trouble of moving them to fresh leaves would in great measure be avoided. The young insects as soon as they are born are fond of sucking up water, which they do before they take to eating. Water should therefore be sprayed over eggs, worms, and leaves two or three times daily, during and before the hatching. The hatching-room should be kept heated to 70° Fahr., never lower. It is necessary to confine the worms, by surrounding the pots and plants with muslin, or they will crawl about and be lost.

After the third change of skin (for like mulberry silkworms they shoot their skins four times), they may if desired be transferred to the oak in the open air; and this is stated to be a good plan, when they can be shaded from hot sunshine. Protection by means of muslin bags around the boughs is, however, requisite, or the birds may carry them off. Large boughs 5 ft. or 6 ft. high could be brought indoors, and placed in vessels containing water, or wet mould; this would maintain the foliage fresh, and render it unnecessary to change the boughs for at least two days. In removing the worms to fresh boughs they should never be handled, but the boughs should be placed alongside the old ones, or the old ones with the worms on should be cut away and placed on the fresh ones. When the worms remain stationary in their sleep, previous to changing their skins, they should not be touched or moved at all. It is recommended to water over the worms occasionally of a hot summer's evening. The worms when arrived at maturity spin their cocoons among the oak boughs and leaves. The beautiful moths appear about the end of August.

Old Catton, Norwich. LEONARD HARMAN, JUN.

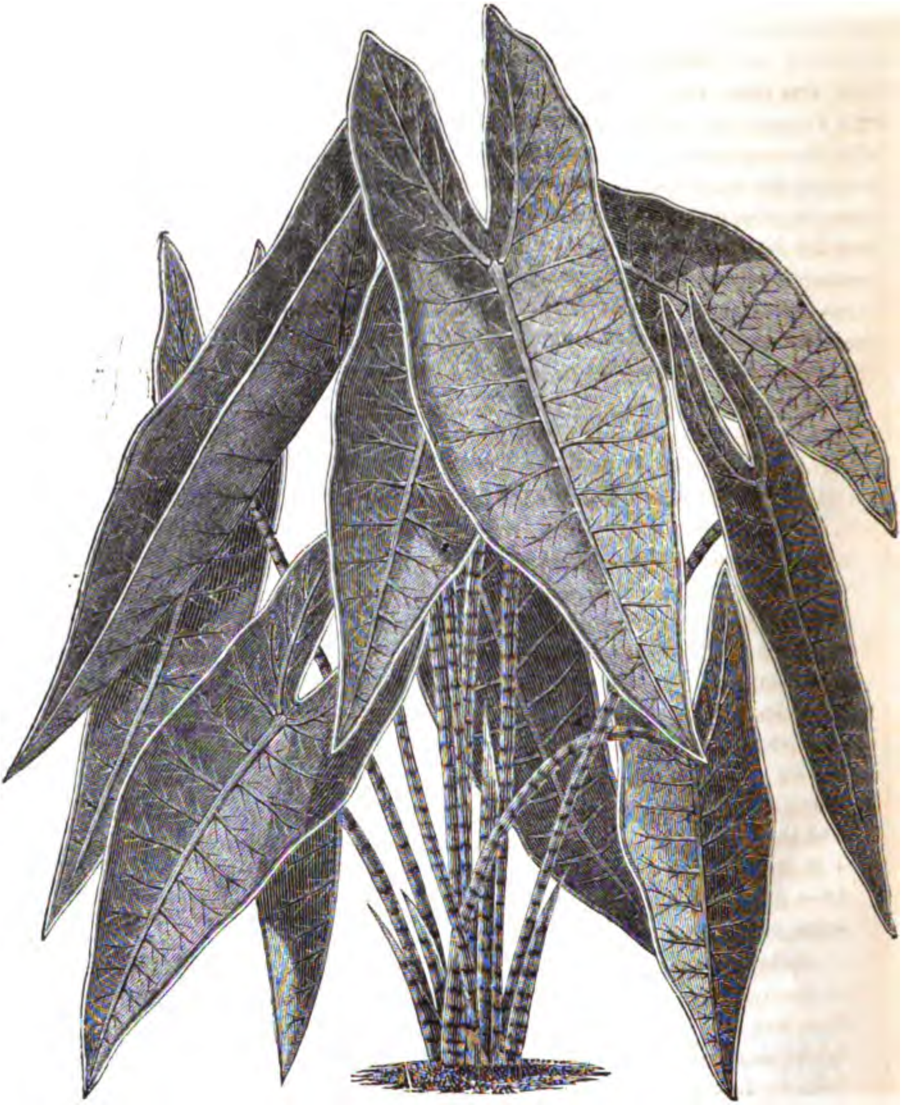
ANTHURIUM SCHERZERIANUM.

I HAVE not seen the free-seeding property of this plant noticed so prominently as it deserves to be. Our plant, here, having received no extraordinary treatment, can scarcely be singular in producing its beautiful berries, about the size of buckshot, packed close upon one another with a regularity which cannot but be observed and admired. The colour in the early stages is bright green and most pleasing, but it is when the various changes take place, and as the fruits approach maturity, that the greatest amount of interest is awakened, tints of orange and crimson, spreading from the base to the apex, deepening in colour round the base until they become rivals of no mean importance to the flower-spathe that preceded them. In this condition they remain for perhaps ten or fourteen days, when the gummy substance by which they are affixed to the spadix, seems to lose its power of adhesion, and the fruit drops. The leaves on the plant producing these fruits measure 9 in. in length by 1¾ in. broad. It has had perfect health since we received it from Mr. Williams, of Holloway, about two years ago. It enjoys liberal pot-room, and a soil of light turfy peat, with sand of the best quality.

Southend Gardens, Darlington. JOHN RICHARDSON.

ALOCASIA INTERMEDIA.

WE have in this noble stove plant one of the many successful results of hybridization, for which the establishment of Messrs. Veitch and Sons, of Chelsea, to whom we are indebted for our illustration, has become so famous. It is, no doubt, one of the finest of the Alocasias, on account of its free growth and handsome features. The leaves are large and of an elongate sagittate outline, and they have all the beautiful colouring of A. Veitchii, which was one of its parents; indeed, it is exactly intermediate in character between its seed-bearing parent A. longiloba, and its pollen parent



A. Veitchii. The First-class Certificates and Medal it has won at the Exhibitions of the Royal Horticultural, and Royal Botanic Societies are a sufficient testimony to its merit as an ornament to our hothouses.

Alocasia intermedia might be briefly and accurately described as a remarkably vigorous, free-growing, and more abundantly foliiferous representative of the very striking ivory-ribbed A. Veitchii, and as such it is certain to become a favourite amongst cultivators. M.

SPRING FLOWERS FOR FERNERIES.

SPRING Flowers are welcome everywhere. It is difficult to name them without getting into what has been sneeringly called the gushing style; nor is this to be wondered at, for each of them is not only a gem of beauty in itself, but a joy in the memory for evermore. These flowers also come upon us with all the charming force derived from striking contrast. We are literally or figuratively frozen up in the hardness of physical death or mental torpor, and suddenly the spring flowers touch us with the quickening breath of a new life. We are mellowed and thawed at their approach, and thenceforth leap up to chant their praise, and descant upon their charms. And yet who has ever exhausted the sweetness of the violet, or the purity of the snowdrop, or awarded praise which transcends the satisfying fullness of the originals?

Amongst my readers I anticipate a great diversity of opinion upon the best means of enjoying to the full our spring garland of flowers. Some prefer converting it into a winter one. Their mania is forcing. Everything that will endure it, is forced out of season. Their taste for abnormal growths is so inveterate that summer beauty must be had in spring, autumn in summer, winter in autumn, and, of course, spring in winter. Well, we can only wonder at the whimsicalities of taste and fashion. HE, however, "has made everything beautiful in *its time*," and therefore I believe the best time to enjoy spring flowers is the spring. Still those may readily be forgiven, who seek to have spring in winter, and spring again in spring-time—two springs in one year! Fortunately they will not be alike. The setting of the flowers and their surroundings will be different. Spring flowers in pots, or grouped indoors, are not the real spring flowers of our English season; and much of our enjoyment of spring flowers depends upon their surroundings. A common daisy in a pot, for instance, is nothing; on the green-cushioned lawn, it is alive with poetry and beauty. So it is to a great extent with most spring flowers. Fully one-half of their effectiveness and beauty depends upon their setting.

Spring Flowers, too, supply the link between garden and wild flowers, many of them seeming to hover upon the doubtful border-land between the two. Therefore, they seem most at home in an intermediate state, such as is provided by the well-disposed fernery, a spot where Art may achieve her highest triumph, by losing herself beneath the ampler folds of Nature's drapery. In such positions, disposed in bold patches, spring flowers are irresistible. With the green or even brown fronds of the ferns as a background, they stand forth in all their richness and purity. It is positively charming to see the Christmas rose breaking the snow away from a Scolopendrium leaf, and enlivening it with the glory of its silvery sheen. And then the winter aconite decks the dying fronds with golden crowns, and the pure snowdrop waves its tiny bells among tufted polypods, or curving Polystichums, or drooping brown masses of Lastreas or Athyriums. Here, again, the violet of all shades of colour peeps forth languidly, dropping down sweetness; and the primrose springs out boldly from its rough, strong sheaths of lovely green leaves. In other places large masses of Arabises, Aubrietias, and Hepaticas, of forget-me-nots, daisies, single crocuses of the older kinds, daffodils, common Alpine auriculas, polyanthuses, single anemones, wallflowers, and honesty, white and red, may be introduced among the ferns in all directions. In fact, there is hardly any limit to the number of plants that may be artistically disposed amongst ferns. Care must, however, be taken not to introduce very gross feeders, to rob or overshadow them. Within this limit, almost all small-growing herbaceous plants are charming amongst ferns, whether they flower in the spring, or at other times.

In addition to those already named, most of the Campanulas, Saxifrages, Sedums, Veronicas, Statices, lily of the valley, &c., have a fine effect, nestling on the ground overhung with ferns, or clothing rough blocks of stone towering far above their feathery fronds. Enough, however, has been said to draw attention to the subject,—one that opens up inexhaustible sources of pleasure and happiness to the lover of nature, and the devotee of art.

One word of caution, to prevent disappointment, and I have done. If the fernery is much overhung with trees, nearly all these flowering plants will require to be propagated annually, and grown on good ground, fully exposed to the sun throughout the summer, and then during winter or early spring transposed in large patches to the fernery, where they will recompense the labour with a sight enough to charm the fair goddess herself! D. T. Fish, F.R.H.S.

BOILED LETTUCE.

SOME twenty years ago I was at considerable pains to point out the great importance of the Lettuce tribe, not as salad herbs only, but as veritable vegetables boiled after the fashion of spinach; but the thing never got to be popular—in fact never appears to have been understood. In the sunny land of Spain, the muleteer makes a breakfast of a bunch of grapes, and a family will make a light supper of Boiled Lettuce. When I compared notes with an eminent Continental gardener in the employ of Prince Borghese, my idea of salad herbs underwent considerable modifications.

It would not, perhaps, be desirable to go into details of the Continental system of growing salad herbs, or of making dressed salads, prepared with oil and Chili vinegar. Suffice it to say, that with such seasoning (sauce) many herbs would go down sweetly, which our labouring population will not now touch, their ideas of salad being confined to celery and lettuce, dipped into salt and eaten.

The flowers of nasturtium (red and yellow), the petals of roses, and the leaves of common parsley, are all salad materials of the highest order, and give quite a new character to the contents of the salad bowl. But to return to our more immediate subject, the Boiled Lettuce.

Herbs blanched, as Celery, Endive, and Lettuce, are already popular enough, and if it be granted that they are good when eaten raw—and no one will call this in question—it is just possible that in clever hands they might be as good, if not better, when boiled. I have supplied celery for boiling as a "vegetable" twenty years ago, and I only mention it now to show that the boiling business has already set in among our salad herbs, and in all simplicity to state my belief that the practice might be extended with very great benefit to the poor man. The late hot and dry summer gave everybody a relish for salad herbs and cool dishes, and unfortunately the lack of moisture seriously restricted the supply. It is therefore a good time now to turn our dearly-bought experience to account, and not only to grow Lettuce more abundantly than we have hitherto done, but to grow it for a different end, and after a different fashion.

Under ordinary circumstances, Lettuces are reckoned unfit for table unless they are fully grown and well blanched, but it is very far otherwise with Lettuces that are grown for boiling. If they stand thick enough upon the ground, whether blanched or not, provided they are big enough, nothing more is needed; and although all sorts of Lettuces will do for boiling, Cos Lettuces alone should be grown for that purpose. All the tying-up will be done away with, and much less space will be wanted to bring the same number of plants to maturity than has till now been required. It therefore amounts to the introduction of an entirely new vegetable into our dietary, and, moreover, one of the most tender in quality as well as one of the most easily cultivated. When once the prejudice which unfortunately exists among a certain class against all novelties, has been got over, we may hope to see a railway porter with his patch of Lettuce by the side of the "line," not for the purpose of being eaten as a salad herb, but to accompany bacon, mutton, or beef, as the larger half of a good dinner.

When supplied with plenty of manure and moisture, Lettuces rush up rapidly, and therefore frequent sowings will be necessary to ensure a regular supply. By growing the plants in seed-pans or boxes under shelter in spring, and by transplanting and watering, four crops may be got in the year off the same ground; and he will be but a poor tiller of the soil, that cannot get at least two crops a year off the same land, by sowing the seeds where they are to remain without transplanting. Each crop will yield a very great weight of food, for in the case of Lettuces for the pot, it is all eatable that stands above ground; there is no waste. A pinch of the seed of the value of one penny will suffice to sow a bed 9 feet long and 4½ feet wide. About 16 plants should be grown on every square foot, but I need not enlarge upon the way that a bed of broad-cast Lettuces should be cultivated; for if they are well sowed on a firm, level bed, and lightly covered with sand or finely sifted soil, little else will be needed until they are fit for the pot. The richer the soil, the more crisp and delicious will the Lettuce crop be, and the sooner will it come to perfection.

Salford. ALEX. FORSYTH.

THE KUMQUAT, CITRUS JAPONICA.

[The following valuable information respecting the treatment of this highly ornamental fruit-bearing shrub was communicated to the meeting of the Royal Horticultural Society on the 16th ult. by Mr. R. Fortune :—]

AMONGST other plants which I discovered and introduced into this country while on the mission to China in 1842 was the Citrus japonica, or Kumquat. I found it cultivated over a large tract of country in China, but it was evidently most at home in the more temperate parts—for example, in the islands of the Chusan Archipelago, and on the mainland in the same latitude. Here large plantations were met with on the lower slopes of the hills, and very beautiful they appeared in autumn, winter, and spring, when the plants were covered with their golden-coloured fruit and deep green leaves. The fruit is much liked by the natives, who eat the skin as well as the pulp. Its chief value, however, is when used as a preserve. A large quantity is exported annually to Europe and America in China jars, preserved and sent home in nearly the same way as the better known China ginger is sent.

In a horticultural point of view, in this country we must look at the Kumquat as an ornamental plant only; and I think that if our gardeners *would set* about it in the right way, they would find its cultivation easy, and it would amply repay them by being one of the most ornamental plants for winter decoration. I believe that a knowledge of climate and other circumstances relating to a plant's natural habitat is of the first importance, if a gardener would be successful in its cultivation. Here is a wide field for study, in which practical horticulturists would do well to labour. For what do we really find if we enter an ordinary hothouse in some of our English gardens? We find plants which have been formed for, and which occupy situations on the earth's surface widely different, crowded together in one house, where they are treated much in the same manner, as if their nature and requirements were of a like character. Need we wonder at the results of such treatment? I may mention, as an illustration of this subject, a circumstance relating to the cultivation of the Tree Pæony in China. This beautiful plant is a native of the more northerly parts of the Chinese Empire, where the winters are extremely cold. Large quantities of it are brought south to Canton and the other southern towns every autumn, where it blooms well the first year, but the first year only. The winter is too warm for its constitution, and if its cultivation is further attempted in the new climate, it only dwindles away, and eventually dies. In practice the Chinese simply throw the plants to the rubbish heap when the blooms fade, and order from the north a fresh consignment every autumn. In no country in the world is the artificial cultivation of the Vine more successful than it is in England. The reason of this is, that its natural requirements are thoroughly understood and supplied. When we can say the same regarding many of the tropical and other fruits which we now see so seldom, although the plants themselves have been long in our possession, those fruits will soon be common enough. In addition to the Pine and the Grape, we shall have the Mangosteen from Singapore, the Bombay Mango, the Lechee, Longan, and Yangmae of China, and a number of other fruits from various parts of the world, which will add to the enjoyment and interest of the dinner-table. But first of all we ought to be successful with the Kumquat and some small Oranges from the temperate parts of China, as they come from a climate more nearly resembling our own, than does that of the other plants to which I have just alluded.

From what I have stated of its native country it will naturally be concluded that it is a much hardier plant than the common Orange. In the country where the Kumquat is found in the highest perfection, the common Orange will not survive the winters; and, on the other hand, the Kumquat, when cultivated in the south of China, does not succeed, although the common Orange is found there in the greatest perfection. The cold winters of the North, which kill the Orange, are favourable to the constitution of the Kumquat. Both plants require warm summers; indeed, the northern summer is frequently hotter than the southern one. A hot summer temperature, varying from 80° to 100° Fahr., is necessary to enable the Kumquat to form its growth and ripen its new wood; in winter it will bear without injury from 10° to 15° of frost, and perhaps even a lower temperature than this.

Keeping in full view the principles I have endeavoured to illustrate, and taking our lesson in cultivation from Nature, there ought to be no difficulty in cultivating the Kumquat in England. If we wish to have it in high health and vigour, we must keep it cold and rather dry in winter. During its season of growth in summer it ought to have a liberal supply of water, and a temperature of from 80° to 100°, and this heat should be kept well up even in autumn, in order that the young wood may be well ripened.

THE GLADIOLUS AS A SHRUBBERY ORNAMENT.

LAST year I had between 3,000 and 4,000 Gladiolus bulbs planted in the shrubberies here, principally amongst Rhododendron clumps. Although the summer was so dry and warm, they flowered vigorously, which was, I believe, owing to the particular way in which they were planted, and from their having the benefit of several waterings when the Rhododendrons were watered in June and July. On planting the bulbs, two or three spadefuls of the surface soil was taken off, and some well-rotted horse-manure was dug into the subsoil. The topsoil was then filled in, and three or four bulbs planted in every patch. The soil of these clumps was mostly of a red sandy nature, mixed with some peat or leaf-mould; and such light soils seem to suit the Gladiolus, for I observed very few diseased bulbs amongst the whole lot when they were lifted in October. The spawn (young bulbs) from them was likewise something extraordinary, for they filled nearly a two-bushel hamper, and it would have puzzled Bishop Colenso to have made an estimate of their numbers. On strong rich soils the Gladiolus never throws so much spawn as on poorer light soils, and this should be noted by all growers when they are anxious about extending their propagation.

There is still a great want in the straw, buff and yellow-coloured varieties to give effect amongst the red, scarlet, purple, and light sorts, in masses or in lines in the borders. I have succeeded in raising a quantity of seedlings from El Dorado, crossed with another nankin-coloured variety, and selected last autumn, on their flowering, about fifty yellowish-coloured sorts of good properties, for propagation. I fully believe every gardener, where these flowers are in request, might with very little trouble raise a batch of seedlings every year, and save himself from procuring expensive sorts from the French growers. There is now a great sameness in the colours and shapes of the varieties annually sent out, and as much perfection in their properties as will perhaps ever be arrived at. The cross-breeder must now try for some better yellows, straws, or buffs, and perhaps shades of blue will yet be obtained amongst these gorgeous autumn flowers. One seedling flowered with me last September distinctly marked with a bluish tint in the centre of each petal.

WILLIAM TILLERY.

Welbeck.

SEASONABLE HINTS FOR AMATEURS.—APRIL.

MANY of our hardy Annuals are so really beautiful and interesting that they commend themselves to all true lovers of flowers, but to those who only have a limited extent of glass for the protection of the ordinary "bedding" plants through the winter, they are invaluable, as by means of these, at a slight expense, a fine display of flowers may be obtained; and this, if not so prolonged as the display of summer bedding plants, is, nevertheless, of great beauty and interest whilst it lasts. Hardy annuals should be sown at once in the open ground; they will grow in any ordinary soil, but they do best in a good loamy one, which has been dug deeply, and has had a good portion of rotten manure worked into it; in such soil they grow freely, and if the plants are thinned out when young, and attention is paid to staking and tying, they will branch out and continue a considerable time in flower. Beds intended to be sown with annuals should be deeply dug, if not already done. All vacant places, in borders not wanted for Fuchsias, Salvias, and the other plants recommended last month, should be sown at once with hardy annuals.

An old-fashioned and excellent mode of preparing the ground for sowing annuals, is to take the soil out to some depth, where it is intended to sow the patch of seed, then to put a little rotten dung into the bottom of the holes, filling up with the soil that was taken out, pressing it down firmly, and finishing off by levelling a little below the adjoining surface. Then the seed is sown, and covered lightly with soil passed through a fine sieve, and the name of the plant written on a label and stuck in front. Some attention is necessary in covering the seeds, as all the smaller kinds require only a light covering. As great a variety of annuals as possible should be sown in mixed borders, leaving room for Dahlias, Fuchsias, Salvias, &c., as previously recommended; they come into flower early, are extremely beautiful and interesting, and by the time they begin to fade the other plants will be spreading fast and coming rapidly into flower. Tender annuals should be sown in pans and boxes, and put into a little heat. When the plants are up they should be pricked off, either into boxes which can be put under cover, or into frames or beds specially prepared for them.

Alpine plants will now be coming into flower. Tulips, Hyacinths, and other bulbs must be protected from frost, hail, and cutting winds. Pansies, Pinks, Carnations, Pentstemons, and other plants, kept over winter in pits, should be planted out at once, if not already done. Those who wish to have a fine show of Chrysanthemums next autumn should now attend to their plants. Perhaps the easiest method for the amateur to adopt, is to shake the old plants out and divide them, then pot three or four slips into a small-sized pot, and put them into a frame where they can be kept close for a few days until they begin to make fresh roots, which they soon will do; afterwards they will do best in the open air. As soon as the plants begin to fill the small pots with roots, they should be all shifted into larger-sized pots, using a compost of loam, rotten dung, leaf soil, and river sand. When potted they should be set in an open airy situation, and should be well attended to in watering. They will require another shift in about six weeks' time, when more dung and less leaf-soil should be used in the compost. This shift will in general do to flower them.

The directions given last month for Bedding plants should be attended to this month. Spring-struck cuttings should be potted off, and pushed on. Many of the hard-wooded greenhouse plants will now be in great beauty; air must be admitted freely in mild weather. The plants will now require liberal supplies of water. Plants not in flower, and beginning to grow, should be carefully shifted into clean well-drained pots. Soft-wooded plants should be encouraged to grow by liberal shifts. Young Fuchsias should be shifted as they seem to require it. Cinerarias should be kept well-watered. Pelargoniums should be tied out as they advance in growth, and green-fly must be kept down by fumigating.

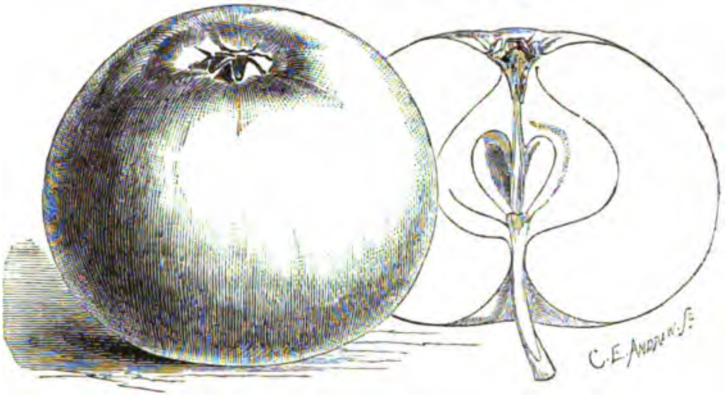
This is a most important month in the Kitchen Garden, and every advantage should be taken of favourable weather to get in crops, and to push on operations. The main crops of Carrots, Parsnips, Beet, Salsafy, and Scorzonera should be got in early in the month. The ground for these should be trenched deeply. Broccoli, Borecole, Brussels Sprouts, Savoys, and Cauliflowers should be sown on beds in open situations; also some Lettuces and Radishes for succession. Two sowings of Peas and one of Broad Beans should be made during the month. The Peas sown last month should be rodded as soon as they are fit. A few Leeks should be sown. Sweet Basil and Marjoram should be sown under hand-glasses on warm borders. Towards the end of the month dwarf French Beans should be sown on warm borders, and at the same time the first sowing of Scarlet Runners should be made. A few early Dutch Turnips should be sown. Cauliflowers, Cabbages, and Lettuces should be planted out for succession. Celery sown last month should be pricked out, and a little more should be sown for late crop. As soon as Onions, Turnips, Carrots and all other crops sown in drills are up, the soil between the rows should be stirred carefully with the Dutch hoe. The planting of Potatos should be finished as soon as possible.

Fruit trees must be kept protected, but more especially Apricots, Peaches, and Nectarines, which have been very full of blossom this season. The weather, on the whole, has been very unfavourable, but where proper attention has been paid to protection, there will be good crops; where it has been neglected, I fear the crops will not be so good. Disbudding should be commenced as soon as the trees are forward enough; it is best to go over the trees often, and remove a few buds at a time. Bullfinches sometimes do a deal of damage in an incredibly short space of time, if not detected. During the winter we escaped, but lately several pairs have visited us, and our standard Plum trees soon notified their unwelcome presence. I know of only one effectual means of getting rid of these depredators, and that is to shoot them the moment they enter a garden or orchard. The amateur should now get some fermenting materials together to make a cucumber bed towards the end of the month;—I don't recommend him to begin sooner,—as the weather by that time becomes more settled and warm, and very little attention is then necessary to ensure satisfactory results. As soon as there is a nice heat up in the bed, some fresh turfy loam should be put in the middle of each light, and when this has got warmed, two plants of Sion House or Lord Kenyon's favourite should be planted in each hillock. All the attention that is then necessary is to give them plenty of air during the day, to water the plants when they require it, and to cover the frames at night with mats. M. SAUL.

Stourton.

MRS. WARD APPLE.

A MOST highly meritorious seedling, raised by Mr. Nathaniel Lawrence, nurseryman, of Chatteris, in Cambridgeshire, from the old Scarlet Nonpareil. It has the outward appearance and form of the Court of Wick, with the beautifully flushed cheek of its parent, the old and favourite Scarlet Nonpareil, and may be thus described:—Fruit below medium size, roundish-ovate, compressed at the ends, very even and regular in outline, skin of a warm yellow or orange on the shaded side; deeply flushed with scarlet on the side next the sun, with here and there a little russet, especially about the eye and the stalk. Eye open, set in a shallow, evenly formed cavity. Stalk rather long, slender, deeply set. Flesh pale yellow, firm, juicy. Flavour rich, with a brisk sprightly acid, particularly pleasant and agreeable. It is in season from November to March.


C. E. Andrew Sc.

This is in all respects one of the nicest little winter dessert apples we have ever tasted, so firm and yet so melting and juicy, so briskly acid, and yet rich and sweet. Beautiful in form and colour, like its parent, but in comparison with that much improved in flavour, we heartily welcome it as a pleasant addition to our winter dessert fruits. A. F. B.

RHODODENDRON PONTICUM.

THIS is one of the most useful of plants for intermingling with other shrubs in the borders of or filling up blank spaces in shrubberies which are intended both for a screen and an ornament. No plant is more accommodating in its habits, as it will flourish in almost any soil which is free from lime, whether it be sand, or loam, or decayed tree leaves, or clay, or any combination of them. In pure alluvial bog soils, however, it will not flourish, as however rich and good-looking such soils may appear, they have no tenacity, and will not hang together sufficiently for the fibrous roots to take hold of them; but if mixed with strong loam, or even lumps of very stiff clay, with some sand, the plants will grow luxuriantly.

Perhaps the soil which it most delights in is a mixture of strong loam and the débris of tree leaves and rotten spray which accumulates in woods. It is therefore peculiarly well adapted for planting in game covers, where evergreens are desirable, as it spreads well and widely over the surface of the ground, and forms most excellent shelter. In this respect, one of its greatest recommendations is that rabbits and hares never touch it. Some years ago Mr. Wells planted a large bank, of about a couple of acres in extent, with this plant, a few coniferous trees being distributed throughout. The soil was composed almost entirely of fine sand, covered with grass and common fern, which was trenched in, and the plants, a foot high, put in at from 8 ft. to 10 ft. apart. They are now that much in height, and completely cover the ground. On the upper part of the bank, where the sand was poorest, they grow more compactly, and do not spread so much, but the seed being distributed over the surface, comes up by thousands. This bank is commanded by an eminence opposite, and when the plants are in bloom they make a very grand show. Now, all over this bank the rabbits have free leave and licence, and they burrow and breed by hundreds, yet I have never found the leaves nibbled or the bark gnawed off. This is undoubtedly owing to their instinct teaching them that the plant is poisonous, for that such is the case we had ample proof here the winter before last, when, during the prevalence of deep snow, some sheep, which had been left in the park overnight and not fed, appear to have got their heads through the fence, and eaten a considerable quantity of the leaves from the trees on the bank. In the morning two were very ill, and shortly afterwards died, and on being opened, their stomachs were found to be full of Rhododendron leaves, which, in the opinion of the veterinary surgeon, had caused their death. Some others of the flock were sick, but eventually recovered. It is my belief that hunger alone drove them to feed on the leaves, because for years the plants could have been reached by the cattle, yet I never saw any touched before.

Many persons appear to have been deterred from planting this useful *shrub* to any extent, because they have imbibed an idea that peat is necessary to its successful cultivation, but this is one of the "fallacies of the faculty"; and the mistake has arisen from observing the requirements of a different class of Rhododendrons, viz., those which come from India, and which certainly are very particular as to soil, it being found that a considerable amount of lumpy fibrous peat in the soil is very conducive to their welfare. Hence it came to be supposed that all Rhododendrons required similar soil. The bright and beautiful colours which were the great attraction in the Indian varieties, however, set the hybridizers to work, and so successful have they been, that by continual crossings with the hardier varieties from different parts of the world, such as R. ponticum, caucasicum, maximum, and catawbiense, they have stamped a vast variety of shades of beautiful colours upon a race which, for hardiness and usefulness in garden decoration, cannot be excelled in any other genus of plants. Better than all, these modern hybrids are by no means so particular as to soil, and many of the best of them may be very successfully grown in a mixture of fibry loam, decayed leaves, and sand intermixed. The foliage and manner of growth will generally indicate how much of the Indian type prevails in the variety, and in proportion as that type is predominant, so will the plant be particular as to soil. Where fibrous peat can be procured as easily as other soils, it may be used with great advantage, but the want of it need not deter cultivators from planting a large assortment of beautiful varieties calculated to flourish in any soil which is free from lime, and of an open lumpy texture, and neither spongy nor too finely comminuted.

Redleaf. JOHN COX.

DOMESTIC AIDS TO GARDEN CULTURE.

I HAVE stated (p. 4) that the Aid to which I refer, favours the development of sweetness and beauty, and yet is in solemn league with death. It is time to state what it is that can possibly possess such apparently paradoxical qualities. It is House Sewage! This in the right place strengthens and beautifies life; in the wrong, it is heavily freighted with the germs of death. By accepting its constant assistance in our gardens, we shall not only impart greater vigour and richer beauty to our favourite flowers, but at the same time strengthen and lengthen our own lives. To explain all this, it will be necessary to advert briefly to a few first principles. These will constitute the theory of my subject, and will lay, I trust, an intelligible basis for a most useful and profitable practice, that it will be my aim hereinafter to enforce.

It must be obvious to every one that, notwithstanding all the cleanliness and beauty that are in the world, there is also much of their opposites. Animal life cannot be sustained without the production of filth or dead matter. Life can only be sustained by the sacrificing of other life. The principle of vicariousness is the law of the universe. We, ourselves, can only live through the ministry of death. Not only do life and death co-exist, and combat each other, as all admit, but they likewise sustain the scarcely suspected relation of cause and effect. It is hard to say, indeed, whether death is more inimical than helpful to life. The two great types of life—the vegetable and animal—seem to work in this matter in opposite directions. The vegetable changes dead matter into living; the animal, living into dead. Our whole life is a reduction of living substances into dead débris. Many of our employments increase the supply, and our life is often enfeebled, frequently sacrificed, by an excessive production of dead matter. Like rough, harsh grit between cog-wheels, DIRT hampers, rasps, stops, or breaks down the delicate machinery of life.

The production of such matters being the necessary concomitant of animal life, one of our chief duties is to see to their instant removal from our homes, where they can only work to render death, to our gardens, where they can be turned into a new life of beauty and glory. And it is a startling fact, that there is no other efficient way of getting rid of dead matter, than Nature's mode of converting it into living substance. Man has been slow to learn this lesson, and, in fact, has not yet learned it. He has tried all other modes. He has converted the great oceans of air and water into world-wide sewers to carry off his impurities, but all in vain; for, Nemesis-like, they have returned to lay fresh siege to his life. He has scattered them to the four winds of heaven on the wings of fire, and occasionally, as in the Plague of London, it has licked up lingering infection, and insured him against a special malady: but at best, fire is an extravagant and dangerous purifier, and is altogether inapplicable to the case before us. The air has been the most favoured outlet, and it is one of the most efficient agents for the removal of dead matter. It never wearies of its burdens, never rests from its labours. It bends lowly over every stagnant pool, polluted river, muddy ditch, and crowded town, and bears off in its bosom a load of dead matter, which it carries far away over corn-fields, flowery meads, gardens, and leafy dells, and through deep dark forests, until relieved of its load by the hungry plants that steal it on its passage. Unfortunately, however, the dead matter renders the carrier itself impure; and the impure air does not simply meet with vegetable, but also with human mouths, on its journey. Neither are these endowed with a power of selection. The whole air, pure and impure, rushes headlong into the latter, and permeates through the entire system. The brain—the seat of life and thought—is paralyzed or poisoned by that sewage that has been permitted to reek out its filth into the air. Who would not shrink with horror from swallowing a mouthful of it? and yet it enters our bodies much more completely through the medium of the air, than if we thrust it into our stomachs. Common cleanliness, and our common safety, alike demand that the air, the very breath of our life, be no longer converted into a common sewer.

Hardwicke. D. T. FISH.

NEW FLORISTS' FLOWERS.

FOREMOST among these, for its vividness of colour, its great size, and its boldness of outline, must be placed the *Azalea La Superbe*, which was exhibited by Mr. C. Turner, at the meeting of the Floral Committee on the 16th ult., and was awarded a First-Class Certificate; much larger, though not equal in form to Stella, it has the great advantage of a glow of heightened colour, being of a deep bright fiery red, the upper segments having a group of small dots of violet; too square in shape to reach the highest perfection of form, it so gains in other respects as to be well worthy the award it received. In point of habit, as far as it could be inferred from a small plant, there was no room for complaint. Messrs. Ivery and Son, of Dorking, sent two new Azaleas, which possess considerable merit, viz., *Emma Ivery* and *Rosa Ivery*, both in the way of Charmer, but the first-named being of a deeper hue of bright rose, the latter paler. The flowers were of good outline, but rough, and will in all probability be seen better a few weeks hence. The former would give a charming glow of colour as an exhibition variety.

The very fine strains of *Cinerarias* now attainable from seed have, to a great extent, superseded the necessity for named kinds; still Messrs. F. and A. Smith, of Dulwich, who are in the van with new forms of this pleasant spring flower, continue to produce new kinds. At the meeting referred to, this firm obtained a First-Class Certificate for *Royal Purple*, a large, stout, and showy flower, which, though inclined to reflex somewhat, is nevertheless well proportioned; it is so broadly edged with deep bluish purple as to be almost a self, and has a rather large pale disc, surrounded by a small ring of white, separated from the edging by an intervening line of crimson. A Second-Class Certificate was awarded to another variety named *Ino*, a good-sized and well-formed flower, having a white ground with a narrow margin of bright rose, and a dark disc.

Hyacinth Hector, classed as a single blue, but having large, well-shaped, pale lilac-mauve bells, and a greyish light-blue tube, is a fine introduction, being so distinct in colour, and most probably better than either of the new pale-blue introductions of last year; it has a bold and massive spike, while the habit is dwarf and yet vigorous. It was exhibited by Mr. William Paul, and was awarded a First-Class Certificate. *Andromache* is a somewhat distinct single-red variety, and was also exhibited by Mr. W. Paul. It is of a pale colour, has a good spike, and is of excellent habit.

During a season when early single Tulips are much below the average, it is pleasant to be able to notice a decided novelty, as well as a good addition. This is a broken form of the well-known *Proserpine*, a very fine and somewhat scarce silken rose flower, but in its new character flaked with white. It was exhibited by Messrs. W. Cutbush and Son. R. D.

To the foregoing may be added two fine *Camellias—Kelvingtoniana* and *La Maëstosa*. The former is a grand flower, with bold guard petals, and a tuft of smaller central petals, the flowers large, deep crimson, richly and freely mottled with white. Fine examples of it have been shown at South Kensington, from the garden of C. Keiser, Esq., of Broxbourne. The latter was sent by Mr. Bull, Chelsea, to a subsequent meeting, and is a broad-petaled, smooth flower of fine substance, of a carmine-crimson colour, slightly blotched with white. Both these gained First-Class Certificates; as did also the richly-coloured English seedling *Rose, Duke of Edinburgh*, a cupped flower of a deep shaded crimson, lit up with bright scarlet; it appears to be a vigorous habited Rose, and an acquisition to its class. This came from Messrs. Paul and Son, Cheshunt. A dwarf-habited variety of *Polyanthus Narcissus* named *Bathurst*, shown by Messrs. Veitch and Sons, which has handsome yellow flowers and orange cups, deserves especial mention as a decorative plant, on account of its neat habit; and another variety named *Her Majesty*, shown by Mr. W. Paul, is a great improvement on Bazelman major, and may be specially noted for the same reason. M.

RED BIZARRE TULIPS.

A SUBJECT which must shortly engage the attention of the florist, is that of the division of the Red Bizarre Tulips from the dark ones. The subject, which I perceive was mooted at p. 156, 1868, is not altogether new, but has been for some years allowed to lie neglected. On looking over some old florists' registers, I find that in 1841, at York, and also at Sheffield, there was a separate class for these floowers, which at Sheffield run twelve deep. Certainly, the sorts exhibited then would not be tolerated now—indeed, very few of them are cultivated; but looking at the great improvement in this class of flowers, it reflects no credit on florists that they should be allowed to remain neglected at the exhibitions. I hope therefore that we shall see the class of Red Bizarres fairly established this season. In this advanced age I do not see why the "Science of Floriculture" should remain stationary, and its votaries become dormant; but as a class, florists are in many instances rather dogmatical.

We have two classes for the white-ground flowers—the Byblömens and Roses, and there are those who advocate a third for Rosy Byblömens, a class the adoption of which is only a question of time, for there are many fine sorts that we cannot class properly in the other two, and which when young will pass as Roses, but if old are staged with the Byblömens, a state of things which is rather confusing to the ideas of inexperienced amateurs. Mrs. Dixon and Bion, both raised near here by Mr. Butler, and purchased by the late Mr. Dixon, of Manchester, belong to this class, as do many new sorts which are really fine, and worth placing in any choice collection.

In this locality there is more opposition to the Red Bizarres than is found in other districts; and yet one of the most refined tulips we have, Dr. Hardy (Storer's), belongs to this class; whilst that which rose to such a fabulous price in Holland during the Tulip mania, 5,500 florins, was also of this class, a confused red-flamed Bizarre, which would not now be tolerated on a moderate bed. There are, moreover, several new ones ready to claim the attention of all ardent admirers of this Queen of May.

At the meeting of the South Lancashire Society, at Stockport, on the 6th inst., the subject was mooted, and some discussion on it took place. Mr. Hepworth, of Huddersfield, who is favourable to the adoption of this steadily increasing and improving class, thought it high time that something should be done in the matter; and he hinted that some years ago a class for these Red Bizarres was started in London.

I should be glad to hear or see of others taking up the subject. There are many complaints about the lack of floral information, and no wonder, when some of the more able refuse to lend their aid in its dissemination. We are certain that it is not on account of dear paper or excessive postal charges. It may be that many of the old enthusiastic florists have departed from amongst us, and that the young ones lack that spirit of energy and enterprise which distinguished them, and which is so requisite to make a true florist. There are few young florists to be found at the present time, who would walk eighteen or twenty miles and back in a day to look at a few new flowers and gain a little information, and they care as little about imparting what they do know to others.

Education is to be had in many localities *gratis*, and free libraries are now becoming less rare than formerly, so that the rising generation has many blessings that were not enjoyed by its predecessors, and if it neglects to avail itself thereof, this must be its own fault. By taking advantage of these opportunities, our younger florists may, however, benefit themselves, and improve the character of our floral information at the same time.

Winton. JOHN WALKER.

MONTHLY CHRONICLE.

THERE has recently been some discussion in the Gardening papers on the very curious subject of Potato-grafting, with the object of producing graft hybrids. Mr. Taylor, of Fencote, states that the variety called Yorkshire Hero was raised by Mr. Almond, by grafting eyes of the Lapstone kidney into an Ashtop kidney, and that he himself has raised Yorkshire Hybrid and others by a similar process. The following is his mode of operation:—Two sound potatoes of different varieties, whose good qualities it is desired to blend, are selected. From one of them all the eyes are first to be cut out with a sharp knife, and then a piece of the tuber in the form of a wedge or some other convenient shape, this being replaced by a scion of similar shape from the other tuber; the scion should have a good eye or two, nicely sprouted, about half an inch long. The two must be tied firmly together with a piece of bast or string, a couple of lady's hairpins being first run clean through both potatoes to prevent the tie from slipping off, as well as assist in holding them together. The fit must be a good one, and the rinds of each must meet, as in grafting other plants. The operation must be performed quickly, and the grafted set must be planted as soon as possible. It is best to have the trench opened and manured ready to receive the grafted tubers, and to place them therein and cover them with soil as quickly as possible. Some of the grafts may fail, so that it is best to graft a dozen or more. They will produce rounds and kidneys, pink-eyed and mottled, purples and reds, of various shapes and sizes, some early, some late, some large, some small, according to the kinds which are grafted. All the produce, large and small, must be planted the following year, for until the tubers have been grown it cannot be told whether the varieties are early or late. The early ones are easily discovered by the early decay of the foliage. The produce of such as look promising by their shape and general appearance, should be put into separate bags or boxes, so that they may be further grown and proved. Mr. Taylor states that the greatest number of varieties are produced from a kidney grafted with a round, or a round with a kidney. The operation should be performed early in April.

—— NEVER, except in the bulb-fields of Haarlem, has there been such a brilliant display of Hyacinths as that at the first Spring Show at Kensington on the 13th ult. Even in that favoured bulb-growing region, as we learn from the Dutch growers who came over to witness the competition here,—and who did much towards giving it importance, by subscribing several handsome prizes which led to a spirited competition—even there, such splendid cultivation, and such noble specimens, as those displayed by our champion growers, Paul and Cutbush, are not to be met with. For the chief honours it was, with these growers, a neck-and-neck race throughout.

—— THERE is to be an International Exhibition of Gladioli at the Crystal Palace, in the last week of August next. The Crystal Palace Company will, it is announced, contribute £50 towards the prize fund, to which also most of the principal growers, professional and amateur, will subscribe. Some of the French growers have intimated their intention to exhibit.

—— THE shoots of the Black Currant have in some localities been affected by a disease resulting in the destruction of the buds, and which is caused by a species of Acarus so extremely minute as, when present in quantities, to produce the appearance of white powder. Under a lens of tolerable power they appear like a number of inactive worms or maggots, but under a high power they are found to be accompanied by eggs; and Mr. Berkeley believes that he has also seen within the body of the mite an egg just ready to be protruded. An acarus of the same type has been found in the papillæform galls so common on the leaves of the Lime; and very similar mites occur in the galls of Willow leaves. The minute acari of the Black Currant vary in size from about 1-250th to 1-140th of an inch in length. There are two setæ at the end of the abdomen, and one on each side, four legs, and a pair of palpi. The abdomen is closely striated with granular lines, which are frequently far more visible in the dead skins than in the living insect. The disease was first observed in Yorkshire about four years since, and has increased rapidly, and seems likely to make the cultivation of the Black Currant very precarious.

—— A MONSTER Aroideous plant has recently been met with at Nicaragua by Dr. Seemann, who has sent living specimens to this country. It has a rhizome larger than a man's head, and a peduncle 4 ft. high, and 4 in. in diameter, bearing an upright spathe, which measures 2 ft. in length and 1 ft. 8 in. across. It emits a carrion-like odour. On the outside it is of a dark purplish blue colour; inside it is reddish brown, the part surrounding the spadix being yellowish white. The plant has only one leaf, which measures 13 ft. 8 in. in length, the petiole alone being 10 ft. long. The plant is evidently a "big brother" to the Indian Amorphophallus.

—— THE Lonicera fragrantissima is a most desirable evergreen shrub for a sunny nook on a conservative wall, and worthy a position in all gardens, whether large or small. In mild seasons it will bloom in such a situation, from November onwards, and its small white flowers are deliciously fragrant. Like all the Loniceras, it strikes readily from cuttings. The plant blooms more profusely when spurred in freely.

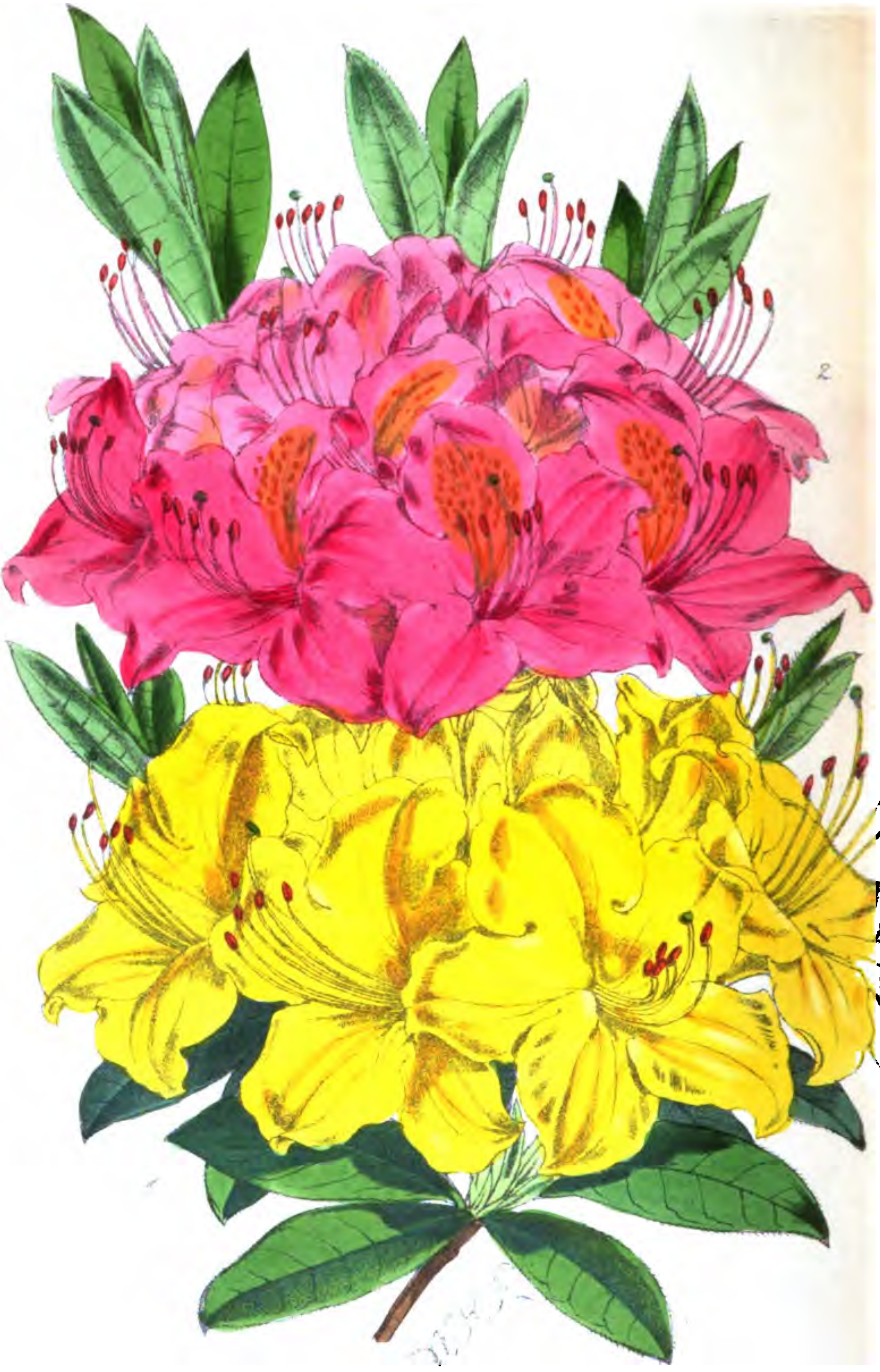
—— THE Myrobalan, or Cherry Plum, is evidently as distinct a species as the Sloe (Prunus spinosa), for although many thousands are annually raised from seed to be used as stocks for a few sorts of Plums, which succeed well when grafted on it, no variation in habit is ever seen. There are two or three kinds that vary in the colour of their fruit, one bearing yellow and another greenish-yellow Plums. The latter is common in Belgium, and strikes freely from cuttings in the light-peaty soils of that country, where it is called the Mirabelle Plum, and is used for stocks for Plums, Peaches, and Apricots. A Plum introduced some years since to Chiswick from the Himalayas as the original form of the Green Gage, proved to be the Cherry Plum.

—— THE Golden Russet Pearmain is a very fine Apple, raised in the neighbourhood of Crewkerne, by R. Donne, Esq. It is one of the best in cultivation, equalling in flavour Cox's Orange Pippin, Ribston Pippin, and Sykehouse Russet. The fruit is conical, or Pearmain-shaped, of medium size, and of a fine lemon-yellow, tinged and dotted with vermilion on the sunny side, and covered with patches and tracings of rough russet, especially around the eye. The flesh is yellowish-white, rich, juicy, and aromatic, and it is altogether a delicious Apple for the season, December to March.

—— A MUSCAT of Alexandria Vine, at Castle Kennedy, has no artificial heat given to it up to the time of its starting into growth of its own accord. Under these conditions it succeeds perfectly, Mr. Fowler having tried the plan for several years, and excepting some Muscats at Archerfield, he finds that it finishes its berries better than any he ever saw. This fact is worth knowing, for amateurs are afraid to introduce this sort, owing to the heat and forcing it is said to require; while Mr. Fowlor grows it in a house devoted to Lady Downe's Seedling, which only requires a little artificial heat in the atmosphere to consume damp, and ripen the wood.

Obituary.

—— MR. SEWARD SNOW died on the 10th of March, in his 76th year, at Wrest Park, Bedfordshire. For many years he had been a successful exhibitor at the metropolitan shows. He was also the raiser of several excellent vegetables, especially Snow's Superb Winter White Broccoli, a variety which is highly esteemed throughout Great Britain. Mr. Snow reintroduced, under the name of Muscat Hamburgh, the fine Black Muscat of Alexandria Grape, which had almost grown out of cultivation.



Hardy Azaleas.
1. Nancy Waterer 2. Bessie Holdaway.

J.N.Fitch. Imp.

NEW HARDY AZALEAS.

WITH AN ILLUSTRATION.

HARDY Azaleas are amongst the sweetest and most brilliant of the flowering American shrubs which render our garden scenes so enchanting in the merry month of May. Forty years ago the original species and their immediate progeny, might be seen yielding their masses of golden and fiery and roseate hue, to lighten the dark masses of evergreen Rhododendrons with which, then as now, they were commonly associated. After that the Continental cultivators took up the improvement of the Azalea, and the Ghent varieties of some twenty years since revived for a while its popularity; but with the onward march of fashion it seems to have been again left in the rear, and for the most part unheeded by the masses, though not uncared for by those who knew its worth. Hence we were not surprised, some two or three years since, on visiting the Knaphill Nurseries, one of the earlier and still one of the most pleasant homes of "American plants," to find that the breeding of improved Azaleas had been for some time going on quietly, and that, as a result, a number of novelties of sterling merit had been obtained. It is two of these which we now figure, by permission of Mr. Anthony Waterer.

These grand acquisitions, which occur in considerable variety of colouring, are, as we understand, partly the result of a judicious intermixture of sinensis blood, and partly the result of selection and of seeding on from the best varieties. Not only the quality of the flowers but the habit of the plant has been cared for, and in this way have been secured varieties which combine with larger, more brilliant, and better-shaped flowers, a vigour of growth which enables them to develop their blossoms freely. The new sorts have this further recommendation, that instead of blooming early, and having in great measure faded before their associates the Rhododendrons come into flower, they bloom contemporaneously with the latter, and it need scarcely be pointed out that their brilliant tints, of orange and red especially, are particularly valuable from the fine contrast they present with the colours familiar amongst Rhododendrons. Their early blooming habit was in fact one of the chief drawbacks of the primitive Azaleas of our boyhood, and this is now in great measure removed by the introduction of Mr. Waterer's new varieties.

We may also mention that in the same collection are some wonderfully fine double-flowered varieties. One which we particularly noticed, an exquisite shaded orange, was much brighter and more attractive than the well-known Van Houttei.

Our fig. 1 on the annexed plate represents a charming variety, named NANCY WATERER. It is of vigorous growth, producing contemporaneously with its leaves, fine trusses of deep orange-yellow flowers, which are larger and richer coloured than in any yellow previously obtained, the colouring being most intense in the three upper segments. In this, the flowers are fully two inches across, and sweet-scented. Fig. 2 shows the variety called **Bessie Holdaway**, a lovely flower, sweet as violets, but scarcely so large as the foregoing, the flowers being about an inch and three-quarters broad, and of a clear, lively rose-colour, the upper segment being freely spotted with bright orange. Many other equally beautiful forms have been obtained, and as the process is still going on, we may expect in the future to see the Hardy Azalea again occupying a very conspicuous place in our American gardens. M.

BOUGAINVILLEA SPECIOSA.

THIS plant is certainly, when properly treated, one of the most lovely of all stove climbers. A few days since I visited Sandbeck Hall, the seat of the Earl of Scarborough, and I then had the pleasure of seeing this Bougainvillea in the highest state of perfection. The plant was growing in a 15-in. pot, and was trained along the back and side of the stove, covering a space of 40 ft. by 10 ft., and it was loaded with its festoons of bracts, some of them four feet in length,—indeed, it was a perfect mass of flowers, and the bunches of buds could be counted by the thousand. Mr. Hall states that he finds no difficulty in flowering it, providing the wood of last year's growth is thoroughly ripened, and that the plant receives absolute winter rest by withholding water, and is then gradually started into growth, and sparingly watered until the bracts appear, when it is necessary that it should have a plentiful supply.

Osberton. E. Bennett.

FLORICULTURAL MILLINERY.

FLORICULTURAL MILLINERY! We can find no better term to express our idea of a practice very commonly followed with regard to plants and flowers grown for exhibition, and on which we invite discussion. It is well known to practical horticulturists that most of the plants and flowers seen at our flower shows, are more or less "dressed." Is this legitimate or not? and if legitimate, is it desirable? Legitimate we think it is, *to a certain extent*, although, perhaps, no two individuals would draw the line precisely in the same place. It is not, that we are aware of, absolutely forbidden by any Society, and precedent and usage may be urged in its justification. Desirable we think it is not, and that for various reasons which we shall state hereafter.

Every cultivator who has grown plants and flowers for exhibition knows well that success depends chiefly on two fundamental points.—(1) *Skill in production*, which premises knowledge and judgment in the choice and growth of individual plants and flowers; and (2) *Taste and lightness of finger in the arrangement and dressing*, much the same sort of skill as is required in tricking out a cap or a bonnet, and hence the term we have chosen to express it—Floricultural Millinery. Now, these two points, which are essentially distinct, are not in our judgment of nearly equal weight, the "skill" in production being of far more importance than the "taste and lightness of finger" in the arrangement or dressing. Yet our experience, derived from observation, compels us to say that we think the "finish and symmetry," which are due in great measure to "taste and lightness of finger," often exert an undue influence. The eye is pleased by it, and the judgment does not travel back so far as to inquire concerning the whence and whither.

In making the above comparison we are well aware that a cap or a bonnet has to be made by hand—it cannot be grown, it is the work of an hour. On the contrary, a plant or flower must be grown by a long and thoughtful process. Produce, we say, by the best means of growth in your power the finest plants and flowers you can, but having done this, rest satisfied; do not supplement the efforts of a year's thought and labour, by the transient arts of millinery.

We are free to admit that a plant must be tied up, and this is better done neatly and with taste, than in a careless or bungling manner. Flowers, too, should be so placed in their stands that they may be well seen, and the colours should be so assorted and arranged that each may enhance rather than detract from the beauty and effect of its neighbour. Thus far we concede—nay, consider necessary and commendable. But the little tricks resorted to, to make a plant or flower look other or better than it really is, find no sympathy in our nature. The flattening of Pansies, by pressure, to meet the florist's canon that Pansies should be flat; the gumming and brushing of the petals of Pelargoniums; the artificial packing of the petals of Carnations; the building-up of Dahlias; the pinning of Hyacinths—all these practices are, in our judgment, of questionable taste, and of even more questionable honesty. By the use of them we may approach more nearly to the florist's ideal, but we are reaching that ideal by trickery and deception, rather than by horticultural skill and honest labour.

Do not let us be misunderstood. We are not here questioning the florist's canons, most of which we admit to be founded on common sense and correct taste; it is the means often adopted to reach them, that we take up the pen to do battle with. Is this "millinery" desirable? We think not, and on other grounds than those we have already advanced. It has always appeared to us that the decline in the cultivation of Florists' flowers, or in what used to be popularly so called, is due in some measure to this floricultural millinery. A judge may be hoodwinked, a competitor may be jockeyed by it. But the public—how does it affect them? They view, admire, and purchase from these highly-dressed flowers; but in their hands, even under the most skilful cultivation, the antecedents are never realized. Hence disappointment ensues, a suspicion of deception is awakened, discouragement is the result, and the flowers themselves go out of fashion.

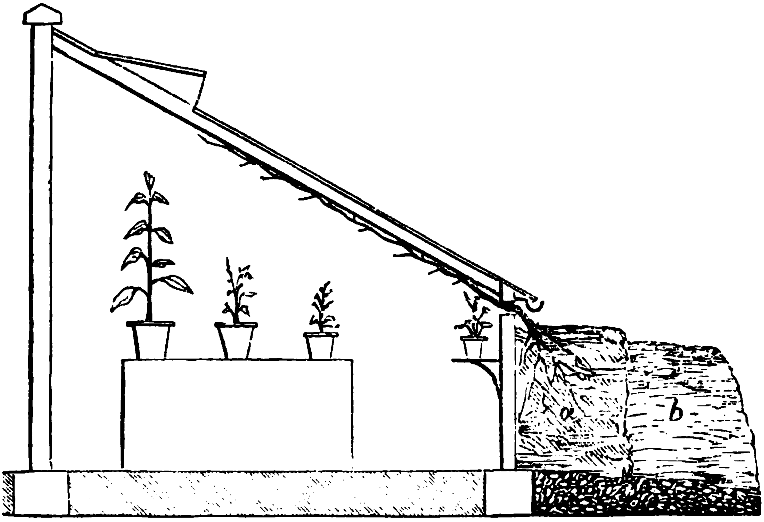
We cannot but think, then, that in justice to the public, and in the interests of exhibitors themselves, this is a state of things which it is most desirable to remedy. And the remedy lies with the judges. If exhibitors find the arts above hinted at, to tell with the judges, they will continue to practise them. Perhaps no rules of any Society can be made clear or stringent enough to ensure the desired end. A Horticultural Society might justly intimate to exhibitors that the judges would be instructed to recognize the skill of the horticulturist, rather than the *mode* of the artist; and if the judges carried out such instructions, this would doubtless soon work a beneficial change. P.

IMPROMPTU BORDERS FOR SMALL VINERIES.

WHATEVER may tend to increase the interest which the amateur takes in his garden, is a proper subject for the pages of the FLORIST AND POMOLOGIST. I have, therefore, no hesitation in offering the following remarks for the benefit of this class of readers, as well as for those who have to force early with but limited convenience. Many persons who take an interest in their only structure—whether that be called greenhouse, stove, or pit, would, there is little doubt, gladly add the luxury, call it hobby, if you will, of growing a few Grapes also, if this could be done without so great an outlay as is ordinarily required. This is especially the case in those frequent instances wherein no better security than "tenant-right" exists.

I wish it to be understood at the outset that I am no advocate for mixing up Vine and Plant culture in a confused and undefinable medley, and with no second structure at hand in which, at certain critical and necessary periods, as the seasons follow their courses, the various odds and ends of plants can be stored away. It is also needless for me to say that I am not an advocate for makeshift vine borders, excepting in such instances as I have already indicated. The simple method to which I now draw attention is by no means new. It is, however, one well adapted for forcing very early grapes, in cases where the best means do not exist. Besides, as opportunity or inclination may incline, it is capable of extension at the will of the possessor.

Against any ordinary lean-to or span-roofed house,—in the case of the latter it may be placed on either side,—a lining, so to speak, is to be formed of good yellow maiden loam, or surface pasturage, bone-dust, well-decomposed spit manure, and the ordinary rich and staple materials, needful for the formation of a sound vine border, as shown at *a*. There must be no risk of its becoming sour from the presence of excessive moisture. This lining or border should be at least from 4 ft. to 5 ft. deep, and if possible, not less than 3 ft. or 4 ft. in width. The outer side is kept up very neatly, by using good square turves, packed up, bricklike, so as to form an even surface outside. What I mean will be seen by a reference to the figure. In this mass of soil the roots of the vines are to be planted, the stems being carried through the necessary openings into the house. Artificial heat, to assist in early forcing, may be readily applied by the simple means of a second lining, composed of the necessary thickness of fermenting material, as shown at *b*. Such a lining, not necessarily of fermenting material, may also be applied as a protection against the frosts of winter, when the vines are not in action; while in the summer months it will serve as a protection against the excessive aridity of the air, or the too free evaporation of the moisture contained within the small compass of the border itself. It should be unnecessary to point out, that a most perfect drainage should be provided, so as to carry off all excessive ground-moisture; and that during the summer months, such a supply of water should be afforded, as to compensate in some degree for the want of more extended scope for the roots, owing to the narrow or upright form of the border. The present will be found a good time in which to construct and plant such a border with young canes to form strong wood for next season's bearing. The soil, which must be moderately dry, should be well trodden or rammed down in the process of packing, so that due firmness of the mass may be ensured.



Digswell. WILLIAM EARLEY.

WATERLOO BROCCOLI.

THIS is decidedly a first-class late protecting Broccoli, and most desirable where Broccoli is always in demand. I believe the stock is in the hands of the Messrs. Stuart and Mein, of Kelso, who originally obtained it from the late lamented Mr. Stevenson, of Lambton Castle. Notwithstanding such an extraordinary season as the one we experienced last year, especially as regards the Brassica family, the few plants I managed to save of the Waterloo more than satisfy my most sanguine expectations, as regards a late Broccoli.

I generally grow a few of the newest kinds, as well as all the good old varieties, and I find that, as a late Broccoli, Waterloo is quite distinct from all I have hitherto grown. This enhances its value, inasmuch as it fills up a most important gap in the supplies, before Cauliflowers are ready for cutting. Let me, then, advise all who value a good late protecting Broccoli, to secure a packet of the Waterloo, for I feel confident it will not disappoint them.

Wrotham Park, Barnet. JOHN EDLINGTON.

DOMESTIC AIDS TO GARDEN CULTURE.

NO sooner did men become aware of the danger of allowing sewage to be lifted into the air as noted at p. 92, than they decided to cast it into the water. Convinced of the danger of polluting the atmosphere, they jumped to the conclusion that their safety lay in fouling the rivers; and the great ocean of waters was thenceforth contaminated in two ways. The first was by sending the sewage down into the earth. Immense dead wells, or cesspools, were formed, from which the dirty water percolated into the springs, polluting our drinking fountains at their hidden sources deep down in the bowels of the earth. This practice is still very generally adopted both in town and country, and a more murderous disposition of sewage could not be devised by the greatest foe of the human race. It is simply poisoning our wells on a gigantic scale, and when we attempt to draw from them the pure water of life, we get a death-potion, prepared by our own ignorance and folly.

But running water has been made man's great scavenger for the removal of sewage and other impurities. Every running stream and brimming rivulet rushes forth to convict man of folly and cruelty in compelling them, the great emblems of purity, to do penance as the removers of filth. The river leaps forth from its mountain home pure, bright, and sparkling as sunny childhood. It is instantly seized hold of by man, tortured through machinery, tormented with mills and paddle-wheels, cut into shreds by boats and ships, forced to pass among myriads of filthy rags, rubbed through labyrinths of soiled linen, and scrubbed over acres of dirty floors, degraded to the rank of a common maid-of-all-work, and finally driven down to its great home in the ocean, laden with the filth of a village, a kingdom, or a continent. Fortunately for us, part of this dirt is deposited on the journey; for being heavier than water, it falls to the bottom, and is covered over with gravel, sand, or clean earth,—all good deodorizers, that render the dangerous deposit comparatively innocuous. But every sudden increase of volume in the water threatens to *restir* the offensive mass, and revive its noxious elements into new life. Besides, very much of the sewage is soluble in water, which therefore becomes impregnated with it, and thus disease and death follow in the track of our running waters. Instead of being what they were intended, health-filled arteries of cleanliness and purity, the impure water which flows along them frequently undergoes putrefaction, and is converted into a black, frothy, pasty fluid, pregnant with disease and death.

And if such has been the state of our running streams, the condition of our stagnant pools and ponds has been even worse. So crying has the evil become, that the authority of new laws has been invoked to abate the dangerous nuisance. But while it is easy to enforce the law in large towns, it will be difficult to bring it to bear upon small villages and isolated dwellings; and the inhabitants of towns are now loudly complaining that their rivers are polluted higher up, in the rural districts beyond their control. This is undoubtedly the case. It must be obvious that if the ditches and streamlets are permitted to be fouled, the river that receives them all cannot be made clean. Hence the importance, and the appositeness of here discussing this great national subject.

It has been said that if every housekeeper kept his own pavement swept, the entire pathway would be cleansed. It is equally certain that if every home utilized its own sewage, the water of the world would be preserved pure. Possibly, in the end, the laws of health may be so extended as to include every dwelling. Only thus can our rivers be thoroughly preserved from pollution. Were the proprietors of gardens, however, wise in time, such laws would never be needed. A thorough knowledge of the nature and properties of sewage, and an enlightened regard to their own interests, would divert the whole of it from the water, and place it on the land. The earth would speedily turn it to good account, and afford conclusive evidence that it provided the only safe and interest-paying bank for the sure keeping and profitable investment of this valuable deposit.

Hardwicke House. D. T. FISH.

BEDDING PELARGONIUMS.

FROM the Royal Horticultural Society's *Journal* we abstract the following classified list of Pelargoniums tried at Chiswick, and reported on as having obtained First-Class Certificates in 1868. At this season, when selections are being made for planting out in the summer beds, this information will, no doubt, be acceptable to many readers :—

§ I.—LEAVES SELF-COLOURED (P. inquinans type).

* *Leaves green—Flowers single, round-petaled.*

1. *Flowers scarlet :—*

Punch.—Vigorous ; flowers bold, bright, abundant. 1st class confirmed.
St. George.—Vigorous, erect ; flowers deep crimson-scarlet. 1st class.
Warrior.—Vigorous ; flowers large, bright, in the way of Punch. 1st class confirmed.

2. *Flowers cerise or rosy-scarlet :—*

Lady Middleton.—Moderately vigorous ; flowers bright rosy-scarlet. 1st class (1865).

3. *Flowers rose-pink :—*

Christine.—Moderately vigorous ; flowers clear rose-pink. 1st class confirmed.

* * *Leaves green—Flowers single, narrower-petaled (Nosegays).*

Orange Nosegay.—Straggling habit ; flowers orange-scarlet. 1st class (1866).

* * * *Leaves green—Flowers double.*

Gloire de Nancy.—Vigorous, flowers full double, in close large trusses, rosy-scarlet. 1st class confirmed.

* * * * *Leaves golden or yellow-green.*

Creed's Seedling.—Compact-growing; leaves yellow-green; flowers deep opaque scarlet. 1st class (1866).

International.—Dwarf, moderately vigorous; leaves flat, yellowish-green; flowers bright deep rose, free. 1st class.

Golden Superb Nosegay.—Dwarf vigorous habit; leaves large, flat, yellowish; flowers dark crimson-scarlet. 1st class.

§ II.—LEAVES MARGINATELY VARIEGATED.

* *Margins pure white.*

Albion's Cliffs.—Free spreading habit; flowers light scarlet. 1st class.

Castlemilk.—Vigorous spreading habit; leaves with broad edge; flowers scarlet. 1st class confirmed.

Mountain of Snow.—Moderately vigorous spreading habit; leaves with broad edge, effective; flowers light scarlet. 1st class.

* * *Margins creamy white.*

Flower of Spring.—Compact moderate growth; leaves with a broad edge; flowers scarlet, of fine quality. 1st class confirmed.

Snowdrop.—Moderately vigorous; leaves with creamy edge; flowers scarlet. 1st class.

* * * *Margins yellow-green or golden.*

Crystal Palace Gem.—Dwarfish, free growth; leaves yellow-green, with dark-green radiate centre; flowers rosy-scarlet. 1st class confirmed.

Unique.—Of the general character of Golden Chain, but apparently of freer growth; leaves with a green, radiating centre, and golden edge. 1st class.

§ III.—LEAVES ZONATE (P. zonale type).

* *Leaves with green margin and disc—Flowers round-petaled.*

1. *Flowers scarlet:—*

Aurora.—Dwarf, compact habit, about 6 inches high; dull zone; flowers large, clear light scarlet; good for edging. 1st class.

Etna.—Moderately vigorous; dull zone; flowers large, clear scarlet. 1st class.

Glorious.—Dwarf, compact; leaves small; flowers abundant, large, clear intense scarlet. 1st class.

Glow.—Dwarf, compact in habit; leaves small, with dull zone; flowers large, clear orange-scarlet. 1st class.

Mons. G. Natchet.—Moderately vigorous; flowers of moderate size, in fine trusses. 1st class.

Sambo.—Moderately vigorous, erect; leaves lobed with dull zone; flowers small, dark crimson-scarlet, distinct. 1st class confirmed.

2. *Flowers cerise or rosy-scarlet:—*

Ephraim.—Vigorous; leaves with dark zone; flowers soft salmon-rose, fine form, resembling Lucius, but with more pink in the colour. 1st class.

Alfred.—Moderately vigorous, erect habit; flowers soft rosy-scarlet, the colour of Lucius, fine and free. 1st class.

Excellent.—Compact habit; leaves with dull zone; flowers light red or salmon-scarlet, very free. 1st class confirmed.

Madame Madeleine.—Moderately vigorous; leaves with dark zone; flowers in fine trusses, beautiful rosy-scarlet, with white eye. 1st class confirmed.

Provost.—Moderately vigorous; leaves with dull zone; flowers soft rosy-scarlet, large, well formed, and freely produced. 1st class confirmed.

Regalia.—Dwarf, compact habit; leaves small; flowers large, of fine shape, rosy-scarlet; in the way of Roi d'Italie. 1st class.

3. *Flowers rose-pink:—*

Blue Bell.—Moderately vigorous; leaves with dull deep-tinted zone distant from the margin; flowers large, of fine form, in bold trusses, of a deep bluish-tinted rose-pink, with white eye. 1st class; the gem of the season.

Rose Rendatler.—Moderately vigorous; leaves with dull zone; flowers rose-pink, the upper petals with white blotches, free. 1st class confirmed.

4. *Flowers salmon-coloured:—*

Jean Valjeans.—Moderately vigorous; leaves dark-zoned; flowers bright clear salmon-colour, in good trusses. 1st class.

Seraph.—Moderately vigorous; leaves with deep broad almost marginal zone; flowers fine, freely produced, salmon-colour, with white eye. 1st class.

5. *Flowers oculate:—*

Eugénie Mezard.—Moderately vigorous; leaves flat, with dark zone; flowers blush-white, with deep salmon eye. 1st class (1865).

Madame Verlé.—Moderately vigorous; leaves with dark zone; flowers white, with pale salmon eye; fine form. 1st class (1867).

6. *Flowers white:—*

La Vestale.—Moderately vigorous; leaves with dull zone; flowers white, free, pure under glass, but suffused with blush out of doors. 1st class. The best *white* for pot-culture.

Madame Martha Vincent.—Vigorous; leaves dull-zoned; flowers blush-white. 1st class (1867).

Purity.—Moderately vigorous; leaves dull-zoned; flowers blush-white. 1st class (1867).

* * *Leaves with green margin and disc—Flowers narrower-petaled (Nosegays).*

† *True Nosegays.*

1. *Flowers scarlet or crimson:—*

Bayard.—Dwarfish and free-growing; leaves lobed, dull-zoned; flowers crimson-scarlet, in large trusses. 1st class.

Hon. Gathorne Hardy.—Moderately vigorous; leaves dull-zoned; flowers large, in ample trusses, bright crimson-scarlet; brighter and larger-flowered than Stella. 1st class.

The Sultan.—Robust, close-habited; leaves faintly zoned; flowers free, showy, bright red, dashed with orange. 1st class.

Waltham Seedling.—Moderately vigorous; leaves with faint zone; flowers rich crimson-scarlet; a fine and free-growing variety. 1st class confirmed.

2. *Flowers rosy-scarlet:—*

Le Grand.—Moderately vigorous; leaves with dull zone; flowers large, rosy-scarlet, in bold trusses. 1st class confirmed.

3. *Flowers salmon-coloured:—*

Baron de Stael.—Dwarf, compact habit; leaves dark-zoned; flowers rosy-salmon; free-flowering, suitable for edgings. 1st class.

† † *Semi-Nosegays.*

Chilwell Beauty.—Vigorous; leaves faintly zoned; flowers deep rose. Too nearly resembling Dr. Hogg in the flowers, but paler in the zone. 1st class.

Comet.—Vigorous; leaves lobed, dark-zoned; flowers in large trusses, dense and opaque bright orange-scarlet, showy. 1st class.

Countess of Strathmore.—Vigorous spreading habit; leaves lobed, faintly zoned; flowers scarlet, having a slight rosy tinge, in fine trusses. 1st class.

Eclat.—Vigorous spreading habit; leaves with dull zone; flowers in large trusses, large, dark rosy-scarlet. 1st class.

King of Nosegays.—Moderately vigorous; leaves with dull zone; flowers large, freely produced, light scarlet. 1st class.

Mrs. Menzies.—Moderately vigorous; leaves with dull deep zone; flowers free, rosy-pink, in fine trusses. 1st class.

* * * *Leaves with green margin and marbled disc.*

Sheen Rival.—Moderately vigorous; leaves marbled with light green, and dark zoned; flowers in fine trusses, bright light scarlet. 1st class (1865).

* * * * *Leaves with yellow-green or golden margin and disc.*

Beauty.—Close habit; leaves yellow-green, with well-defined red-brown zone; flowers soft deep rose, affording a good contrast to the foliage. 1st class confirmed.

Beauty of Calderdale.—Vigorous; leaves large, yellowish-green, with a broad, dark, conspicuous zone; flowers scarlet; effective from its bold zone. 1st class.

Kentish Hero.—Free, bright, and vigorous; leaves yellow, with well-defined, chocolate-red, feathered zone; flowers rosy-scarlet. 1st class.

Mrs. J. Todd.—Compact habit; leaves yellow, with broadish red-brown zone, not very evenly marked; flowers rose colour. 1st class.

James Richards.—Vigorous; leaves yellow with dark zone, effective; flowers bold scarlet, free. 1st class.

Master Leonard.—Neat and moderately vigorous habit; leaves painted, yellow-green, flaked here and there with dark-green, and having a broad and well-defined zone of reddish brown, shaded with darker brown; flowers deep red. 1st class.

⁂ *Leaves with golden margin, more or less green in the disc.*

Lady Culhon.—Free and moderately vigorous; leaves yellow-edged, with broad, deep-red zone. 1st class.

Mrs. E. S. Constable.—Free and moderately vigorous; leaves with yellow margin and dark-red zone. 1st class.

Mrs. Pollock.—Vigorous; leaves bold, flat, yellow-edged, with dark-red zone, very effective; flowers scarlet. 1st class confirmed.

Mrs. Turner.—Vigorous; leaves large, with broad yellow edge, and broad zone of bright dark red; telling. 1st class.

Queen Victoria.—Moderately vigorous; leaves large, flat, yellow-edged, with distinct red zone; flowers scarlet; very effective. 1st class.

⁂ *Leaves with silver margin, more or less green in the disc.*

Glen Eyre Beauty.—Vigorous; leaves with creamy margin, and broad showy red zone; in the early part of the season superior to *Italia Unita.* 1st class.

Italia Unita.—Moderately vigorous spreading habit; leaves creamy white, with distinct rosy-pink zone; flowers scarlet. 1st class.

Velvet Cushion.—Moderately vigorous; leaves flat, with green centre, creamy margin, and well-marked deep rosy zone; very pretty. 1st class.

§ IV.—LEAVES ANGULATE (P. peltatum, lateripes, &c.).

L'Elégante.—A variegated ivy-leaved variety of trailing habit, and likely to form a pretty edging or basket plant. 1st class.

THE CALVILLE BLANC APPLE.

YOUR correspondent "C. B. S.," in giving his opinion (p. 77) on the merits of this favourite French Apple, seems to condemn it for getting discoloured and rotten at the core sooner than other late-keeping sorts. This is not my experience with it this year, for it has kept with me very well, being at this date (April 10) quite sound, and likely to keep so for another month. "C. B. S." has another fault to chronicle about it, namely, that it is too dear in the market according to its merit; but he may have heard of the distich,—

> "What is the worth of anything,
> But just as much as it will bring?"

The French are quite right in sending us fine specimens of this apple, and if they get 2s. a-piece for them at this time, what does it matter, if the public will buy them and give the price? I would rather give 2s. for a nice Calville Blanc Apple, than a guinea for a monster Belle Angevine Pear, at this season. There is something so delicious in the flavour of the White Calville Apple, and its flesh is so soft and melting, that invalids, or people with bad teeth, can enjoy eating it, as it seems to dissolve in the mouth without much mastication. I grant that some of the fine dessert varieties of English and American Apples have more flavour and aroma, but take the leathery skin and hard flesh of the Ribstone Pippin, Sykehouse Russet, or Golden Harvey, and compare them with the tender flesh of the Calville Blanc, and note the difference. Another qualification of this apple is, that it is said to be the finest baking sort known; but I cannot confirm this statement from my own experience, as I have never grown enough of it yet on the walls to be able to prove it in this way, it being too valuable as a dessert fruit.

Welbeck. William Tillery.

SUBSTITUTE FOR GREEN PEAS.

There is an old custom still practised in some parts of Cheshire, as well as in other agricultural districts, of cooking new wheat with milk, under the name of Furmety. This milk porridge, or as it would be called in the North, milk broth, was served up at the Wakes which, in the parish that I refer to, took place on the 29th of June, at which time the wheat would generally be ripe, although still soft. I mention this to show that we Britishers, as the Americans call us, have actually eaten green corn cooked after our own fashion. Where Indian corn is cultivated, the green corn is constantly used as we use Green Peas, and there is very little trouble indeed with the cooking, as the corn is shelled in a few minutes, and the dish is then ready for boiling. I am well aware that it is not held "respectable" to copy the manners of the Americans, but the fact stands unquestioned, that the Englishman, when transplanted to America, eats freely of Indian corn, cooked like green peas. Maize or Indian corn has from time immemorial been used as one of the chief bread-stuffs; and we learn from Holy Writ that our Lord's followers plucked the ears of the standing corn, no doubt in the unripe state, much in the same way as we should gather green peas, and ate them in the field.

I have lately observed in an agricultural paper some instructions respecting the cultivation of Maize in this country, in which it was stated that the seed should be sown early in March. This might just chance to be right once, perhaps, in a century—for I have seen the grass scorched by sunshine in March—but this has happened once only in a long lifetime. Some twenty years ago the Forty-Day Maize was freely advertised, and if I recollect aright, we paid 20s. for a small bag of the seed corn, the bag probably containing about two quarts of grain. There were very sensible instructions sent along with the seed. I succeeded in growing it, and it ripened to perfection in the climate of Devon. But the instructions were, that the seeds should not be sown until the earth had got warm, and the May bug, blind beetle, and bumbledor had made their appearance. The instructions further stated, that the seeds were to be sown where they were to remain, as the plant would not succeed well when sown in pots and transplanted.

The seeds must, therefore, be sown about the middle of May, and be left to take care of themselves. The plant is a sturdy-growing variety of Maize, yet a gigantic grass some 4 or 5 feet high, with fine broad leaves. It is a sub-tropical plant of the easiest culture, and if kept clear of frost, it has little else to fear in ordinary seasons. It requires no prop, like Peas, to support its stem, and will yield abundantly, being a sure cropper. If cottagers throughout the country had at this season a few seeds supplied to them, it would enable them in the course of the summer to compete with one another as to who should grow the best dish of green corn. And when our middle-class families once know the delicacy of this vegetable, it will, I am confident, often be found occupying its place as one of the corner dishes at the festive board.

Salford. ALEX. FORSYTH.

BEDDING TROPÆOLUMS.

THE past summer, so dry and parching, and consequently, so hostile to the efficiency of so many bedding plants, has, notwithstanding, had its uses, one being that it has taught the value of some of the *forms* of Bedding Tropæolums for the decoration of the flower garden, especially that of those trailing varieties that soon cover a bed, and, so to speak, spread over it a garment of green foliage, which keeps the soil beneath cool and moist. I was interested in noting during the past summer some of the kinds used for bedding, and which appeared to be particularly adapted for that purpose.

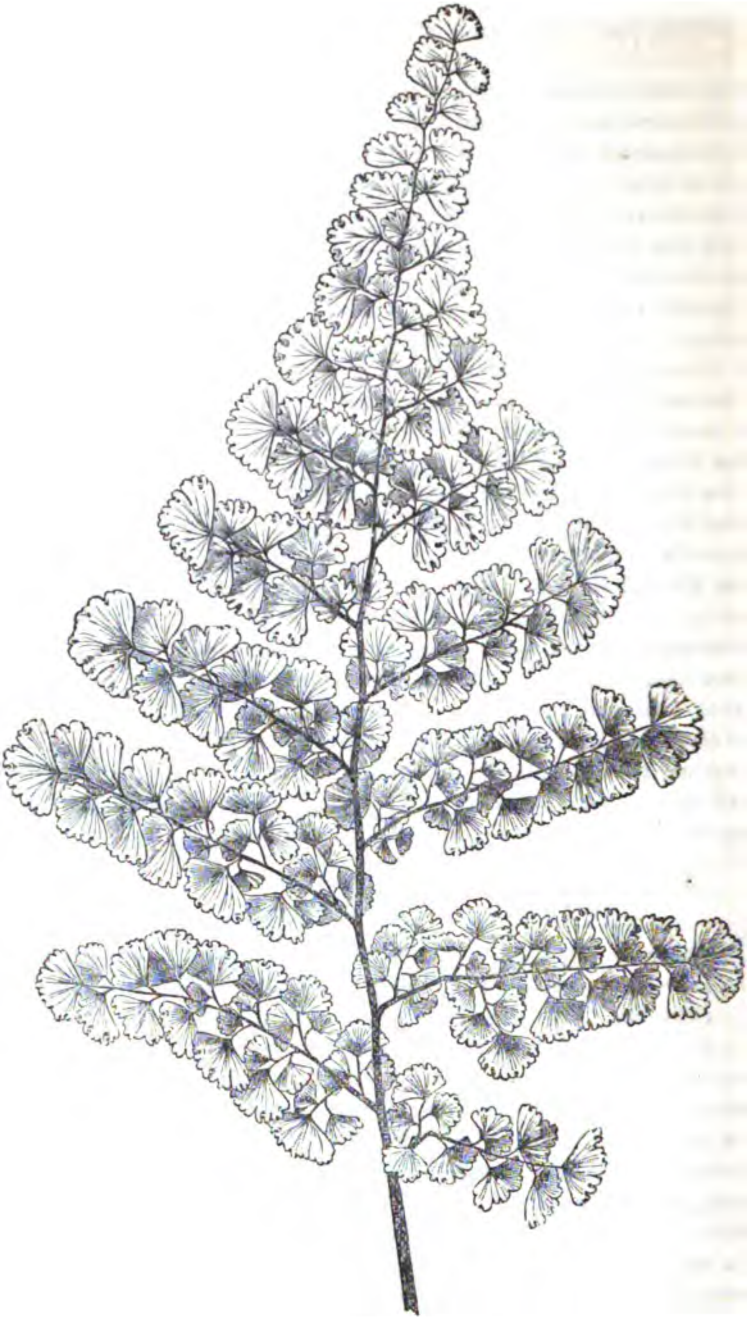
Of the trailing kinds, I select but two, and these quite distinct in character, save in the colour of the flowers, in which respect they much resemble each other. These are Crystal Palace Perfection (Carter & Co.), a kind that, to my thinking, entirely supersedes anything that has gone before it, and which cannot be too highly recommended. It represents the pure Lobbianum type, and was raised on the Crystal Palace grounds; it makes rapid growth, sending out a profusion of long shoots, that hug the ground, so that pegging (except in a very exposed situation) is not required. It really does,—that which some Bedding Tropæolums are said to do, but do not,—throw its flowers clear of the foliage, and the numbers of brilliant orange-scarlet flowers, borne on long stiff flower-stalks, give to a bed a very animated appearance. It is also a durable bedder, both foliage and flowers are so erect and rigid that a heavy rain scarcely dims its lustre; or if it does, so freely does it flower, that the gay raiment of colour is speedily restored. I cordially commend this fine kind, and as a proof of its value it may be stated that it received a first-class certificate from the judges at one of the great shows of the Royal Botanic Society, a year or two ago. Of much more vigorous growth (though none the better in consequence) is Scarlet Gem, also a most useful Bedding Tropæolum. It is a variety that suits the northern and midland districts well, and about some of the big towns of the West Riding of Yorkshire glorious beds of it can be seen during the summer. The foliage and flowers are larger than in the case of the foregoing, the flowers have a deeper hue, and though not so well thrown above the foliage, are not partially hidden, as in the case of some others; it is also a free and continuous bloomer.

Coming now to those of dwarf close habit, I place at the head of them one known as Tropæolum compactum coccineum, one which for general purposes can hardly be surpassed. I saw this growing at Chester in July last, and since in other parts of the country, and I have no hesitation in placing it in the front rank as a bedder. The habit, while free, is very compact, and the flowers really borne above the foliage. One called Advancer comes very near to this, and I think is scarcely distinct from it. T. compactum luteum improved, is similar in habit, but the flowers are yellow, with crimson blotches, and it forms a good contrast to the foregoing. Both of these appear to come from a cross between the Lobbianum and Tom Thumb sections. Of similar parentage is the Moor, another of the compactum strain, with glossy, dark crimson flowers. It is almost too dark for beds, but may be made of service in ribbon borders.

Of the Tom Thumb section, a very large-flowered but useful variety is much used at the Promenade Gardens, Great Malvern. It is a marked advance upon the Scarlet Tom Thumb, and has more of orange in the colour. King of Tom Thumbs, with brilliant dark crimson flowers, is a most useful decorative kind; so is Tom Thumb cœruleum roseum, the flowers of which have a lively dash of blue, and in ordinary summer weather it is highly attractive. The fact that the two last-named did each receive a first-class certificate at the hands of the Floral Committee last year, when bedded out at Chiswick, may be taken as safely indicating that they, too, are really useful decorative kinds. They have, nevertheless, the one great fault of the whole of the Tom Thumb section, that they are partial rather than continuous bloomers; and it is necessary, when they are depended on for a season's service in the flower garden, to make two successional plantings in order to secure a prolongation of bloom. Quo.

ADIANTUM CONCINNUM LATUM.

WE have latterly had some very choice additions to the family of Maidenhair ferns, thanks to the discoveries of the Messrs. Veitch and Sons' collectors. One of these novelties is closely related to *A. concinnum,* having the pinnules of the same character, both as regards form and position; but the frond is much broader, and hence the variety has been named *A. concinnum latum.* Its points of difference, besides the greater comparative breadth just alluded to, are, the stouter rachides, and stiffer growth of the fronds, peculiarities which are very well shown in the figure which we print on the following page, and which we owe to the courtesy of the Messrs. Veitch. It was introduced from Muna in Peru by the late Mr. Pearce, and requires a cool stove. It is a fine plant both for exhibition and decoration, and has gained, as it deserved, the highest honours at our floral competitive exhibitions. M.



SEASONABLE HINTS FOR AMATEURS.—MAY.

THE severe weather which prevailed throughout the whole of March gave vegetation a very salutary check; fruit-tree buds were very little more advanced at the end of the month than they were at the beginning, owing to the low temperature and almost total absence of bright sunshine. The season, which at one time promised to be early, will, should the cold weather continue, be a late one: under favourable circumstances, it can hardly be a very forward one. With the exception of Apricots, Peaches, and Nectarines, all other kinds of fruit trees have been from a fortnight to three weeks later in coming into flower, than they were last year.

Most amateurs will be anxious, as soon as the weather is favourable, to get their places planted and decorated. As much of the beauty of a flower garden depends on the arrangement of the plants, this matter must be well considered, and attended to in planting. Those who can winter a quantity of Pelargoniums, can at once make their place gay and beautiful, there are now such a number of kinds adapted for this purpose, some remarkable for the beauty of their foliage, and others for the brilliance of their flowers. For most of the variegated sorts, the soil in the beds should be of a good depth—at least 18 to 20 in.—and it can hardly be made too rich. For the stronger-growing kinds of the plain-leaved and zonals, no manure should be added to the soil, unless it be of a very light, poor nature, when some might be put into it; but it should be dug or trenched to a good depth, so that the roots may be able to strike down to some depth, which will enable the plants to stand dry weather without the constant aid of the watering-can. Calceolarias are very easily wintered, and all amateurs may with very little trouble have a good stock of them for planting. They come early into flower and continue to bloom late in the season, and when planted largely make a place look very gay and lively. All vacant spaces, either in beds or borders, should be filled up with hardy or tender annuals. No garden should be without Sweet Peas—they are so showy and ornamental, and are, moreover, so useful for cutting from; they may be grown in patches in mixed borders, but must be rodded to support them; they also make a good screen to hide unsightly objects when grown in rows. Nasturtiums of all kinds are very showy and ornamental, the creeping varieties being very useful for quickly covering bare places. The present is a good time to cultivate such spring flowers as Aubrietias, Alyssums, Arabises, &c. Russian and Neapolitan Violets should now be taken up and divided, and the runners planted about 10 in. apart every way on a border in which some peat or leaf-soil has been worked in; they do best on borders that only get a few hours' sun in the morning and afternoon, and must be kept well watered until they get well established; during the summer the runners must be kept pinched off, and the soil between the rows must be occasionally stirred with a hoe. Wallflowers for next year should now be sown in the open ground. When all the planting is finished, the beds and borders should be neatly raked over. Lawns will now require mowing weekly. Walks should be swept frequently when dry, and be well rolled after rains.

As the pits and frames, which have been occupied during the winter with "bedding" plants, will now be empty, they should be turned to good account by growing plants for summer and autumn blooming. Seedling Cinerarias for flowering next winter and spring, should be potted off into small sixty pots; they will do very well in pits or frames if kept a little close until they begin to grow, when air should be admitted to them freely in fine weather. As soon as they begin to fill the pots with roots, they should be shifted into 48-sized pots. They should still be kept in frames, but as the season will now be advanced, the lights may remain off both day and night, except during heavy rains and bad weather, when they should be kept on. Seedlings of Primula sinensis will also do well in pots and frames during the summer months, but they require a little warmth when young until they get nice established plants. For the growth of Balsams, Cockscombs, and other tender annuals a slight hotbed should be made. The pots should be kept plunged, and air should be freely admitted in mild favourable weather. Pelargoniums of all kinds for autumn blooming may be grown in pits and frames. Much attention must now be paid to watering. Plants of all kinds in pots will require liberal supplies. Any plant requiring a larger pot should be at once shifted, and young ones should be neatly tied out as they advance in growth. As Azaleas and other plants go out of flower, the seed-vessels should be picked off.

In the Kitchen Garden constant attention must be paid to all advancing crops. The young crops of Carrots, Turnips, Beet, Onions, Parsnips, &c., should be carefully thinned out as soon as they can well be handled, and the ground between the drills should be stirred with a hoe. Sowings for succession should be made of Peas, Broad Beans, French or Dwarf Beans, Turnips, Spinach, Lettuces, and Radishes; a sowing of Walcheren Cauliflower for autumn and winter use should be made about the middle of the month; Celery should be pricked out when fit, and trenches made ready for planting a portion for early use, putting some good manure in the trenches. Cauliflowers and Lettuces for successional crops should be planted. Cucumbers and Melons will now do well without requiring much attention, if there be a nice steady heat in the beds. They should have plenty of air when the weather permits, and water when they require it, and the shoots should be stopped, and thinned out to prevent them becoming crowded. As Potatos appear above ground, a little soil should be drawn up to them to protect them from frost.

Disbudding, stopping, and regulating the shoots of fruit trees must now be attended to, and nothing should be allowed to interfere with its being timely and properly done, as on it depends in no small degree the beauty and health of the trees. When this is properly attended to, there is little need for winter pruning.

The thinning of the fruit should also be timely and well attended to. A person of my acquaintance has a nice young Victoria Plum-tree against his house. In 1867 the fruit set very thickly on it; he was advised to thin it out well, and was told if he neglected it, the tree could not possibly bear any fruit the following year; but he neglected it, and the result was that the fruit was so small it was of little value, and the quantity was so great that it exhausted the tree so much that the following (last) year there was not a single blossom upon it. This neglect of thinning the fruit is the great evil in our orchard management.

Amateurs who grow Vines up the rafters of their greenhouses must now attend to them. The young shoots will require stopping and tying down. The shoots should be stopped one or two joints beyond the fruit, and all laterals sent out afterwards should be stopped beyond the first eye. The thinning of the berries must also be attended to, as soon as they are fairly set. Much of the strength of the Vine is lost when the berries are allowed to get to a large size before they are thinned. It is also much more difficult to thin them properly, when they have become grown so closely together; besides which, the appearance of the berries is the more likely to suffer from handling them at an advanced stage of growth.

Stourton. M. Saul.

ON GRAFTING OLD PEAR TREES.

AT the commencement of the present century, when the number of good varieties of Pears grown in this country was rather limited, those which were then considered the best were most generally planted in the gardens of the nobility and gentry; and where the soil has been suitable, many of these trees have attained a large size, and on walls have taken up a great amount of space, in many instances to very little purpose, as the bearing shoots are generally at the extremities of the trees, while a large space in the centre is unproductive.

Now, trees of this class are invaluable as stocks for the many improved varieties of the present day; and thus, instead of the choice of fruits being limited to three or four good old sorts, it may be extended to as many sorts as there are side-shoots to graft upon. In this way, it would be easy from one tree against a 12-ft. wall to have from twenty to thirty different sorts. There is no more interesting object for the fruit cultivator to study, than the effect produced by the gradual cutting back of such trees, and engrafting improved varieties upon them. I have followed the practice here suggested for upwards of twenty years, and it has lost none of its interest as I have gained experience. Moreover, by this method, a great saving of time may be effected in the proving of different sorts, as they come into bearing much sooner when thus grafted than on young trees planted out, while if they are found to be in any way unsuitable, they may be cut back and regrafted the next season.

The mode of working is simple enough, and may be so gradually carried out as to interfere very little with the quantity of fruit annually produced. Thus, one side of a tree may be grafted all up in one season, or each alternate horizontal branch may be cut back and grafted, and the remaining branches may be left to produce fruit until the grafted sorts show signs of bearing. Many of them will come into bud the third year, when the remaining branches may be cut off and grafted. Supposing, then, there were ten or a dozen large old trees to be operated upon, and that it was undesirable to interfere materially with the probable supply of fruit, I should graft one side of two trees every season, so that by the time I had got half through the lot, I should expect the first grafted ones to be in a good bearing state; and thus the whole stock might be changed at a very little sacrifice. I always prefer to graft in the rind where possible, but when the shoots are too small for that method, I adopt shoulder-grafting, or saddle-grafting. The sap should be well up when the operation is performed, and moss should be tied over the grafting clay, to prevent it from drying up too quickly, in case parching weather should follow the operation.

Redleaf. JOHN COX.

BELLE DE JERSEY PEAR.

EVIDENTLY this is the same fruit as the Belle Angevine, Duchesse de Berry, and Royal d'Angleterre of the French horticulturists, and the Uvedale's St. Germain of the English gardens. It is said to have been raised in England, and dedicated to Dr. Uvedale, who resided at Eltham in 1690. It has, therefore, no claim to novelty, although often produced as novel by the itinerant Continental dealers in trees and plants, who occasionally visit English towns for the purpose of turning "John Bull" to account. It is a fruit of remarkable size, and can be made very beautiful in appearance by rubbing the skin over with a sponge dipped in sweet oil during the period of the fruit's development, and exposing the outer side to the sun, which imparts to it a pretty rosy tint. By thinning the fruit, and only allowing those to remain on the trees which are on strong spurs, proceeding from the main branches, they frequently grow to 2 lb. and 3 lb. weight each, and one dozen of these pears exhibited in Covent Garden during the autumn of 1867 weighed upwards of 50 lb. The flavour is not good, and can only be made acceptable to the palate by stewing, and the addition of spice, sugar, and port wine.

The remarkable prices some of these large specimen fruits realize is, no doubt, the inducement to produce them, a result which is easily effected by any practical horticulturist of ordinary intelligence. The itinerant dealers to whom I have alluded apply different names to the fruit, such as "La Merveilleuse," "La Belle Excellente," &c., &c., but they are very careful not to allow the specimens they exhibit to be cut or tasted, their object being to sell the trees, which, in spite of fine names and powerful recommendations, is an imposition upon unsophisticated purchasers. They affect to apologize for the objection by stating that they are intended as specimens, and are not for sale; whereas the "genuine English" of the matter is, that they dare not allow it, for fear of exposing the imposition they are attempting to practise.

Jersey. C. B. S.

TRAPPING MICE.

I WISH to recommend a very simple and efficient contrivance for destroying Mice, to those persons whose crops suffer from the depredations of these troublesome little animals. The accompanying figures show that there is nothing complicated in my mousetrap, which consists simply of a couple of bricks, and a piece of wire run through a large pea:—

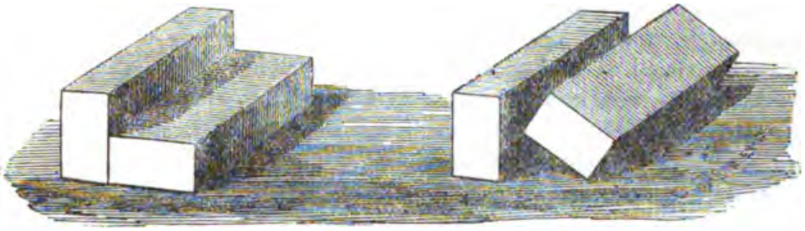
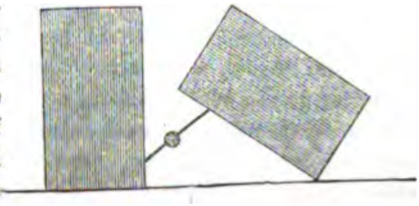


FIG. 1. FIG. 2

Fig. 1 shows the appearance of the trap when down; fig. 2, its appearance when set up; while the subjoined diagram shows more exactly the pea on the wire, as placed in the setting. The trap should be placed either in the row to be protected, or close to it. In setting, one brick is placed on its narrow side, or edgeways, while the other is laid flat, with its narrow side just touching the broad side of the first, this being done in order to make sure that the flat brick is placed at the right distance, so that when it falls it may leave no space for the mouse to escape. The wire and the pea being then in readiness, the flat brick is raised so that it may rest on its lower edge, as in fig. 2. The wire, which is to keep it in this position, should be about one-eighth of an inch thick, and about two inches long, and not pointed; it should be placed in a slanting direction, with the pea near the lower end, which end should be placed within half an inch of the bottom of the brick on edge, while the other end is not more than one inch from the upper edge of the brick that is to fall. The pea end of the wire is that which must give way, and if it be placed in a more horizontal position than that I have described, it will not do so with the slight touch of a mouse or a sparrow. This, therefore, is one reason for having the pea near to the lower end, while another is that of bringing the pea as near as possible to the running level of the mouse, so as



to be the more enticing. Thus fixed, the slightest touch will cause the wire to give way, and the brick will fall instantly, and crush whatever is beneath it.

I have tried all other known means for destroying these little ravagers with but partial success, but with this trap I have caught no less than forty-two mice within the last fortnight upon two rows of peas. This, however, is not the only use to which the trap may be put, for if that artful and mischievous bird, the sparrow, dares to meddle with the pea, his career may, by its means, be as suddenly cut short as that of the mouse; eleven of these troublesome birds have fallen victims to their boldness since the peas have appeared above ground. My traps are, indeed, just now catching many more sparrows than mice, which may be accounted for by the sparrow being fonder than the mouse of the young shoots of the pea.

This trap is not a new invention, for I believe it has been used for some years in this neighbourhood. However, it is not so well known as it deserves to be. I have introduced it into all my sheds, mushroom-houses, &c., as well as into the shrubberies, with surprising success. I claim for it the merits of simplicity, cheapness, and efficiency. Half-a-dozen such traps can be set up in five minutes; they cost next to nothing; and they are certain in their action.

Lillesden, Hawkhurst. THOMAS RECORD.

THOUGHTS ON CROSS-BREEDING PLANTS.

VERY few of us, I fear, appreciate the value of cross-breeding, or hybridizing, as it is commonly called, or give to it that time and attention that it really deserves. The improvements which have already been effected by this agency, in the case of both plants and animals, by the few who have devoted themselves to it with more or less success, are astounding, but I fear the principles upon which action should be based, are far from being properly understood amongst gardeners. Generally when this interesting and rather excitable hobby is set upon by the novice, quantity is made the main object, but this is, undoubtedly, a great mistake. For example, when visiting the garden of Mr. Banks, the eminent Fuchsia-raiser, who has for some years been realizing a considerable sum annually by breeding Fuchsias. I was surprised to find, considering the success to which he has attained, how very few seedlings he raises each year. Again, when I had the pleasure of inspecting the exceedingly interesting garden of Mr. Morris, of Deptford, who is well known as one of the most successful raisers of Zonal Pelargoniums, I learned that this gentleman also raised but very few seedlings. On inquiring how it was that within such a limited range he was successful in obtaining so many distinct varieties, Mr. Morris told me, that having first fixed his mind on two varieties that were perfectly opposite, or possessed decidedly distinct features, plants of these were carefully prepared and brought forward for impregnation, every possible pains and all past experience being brought to bear on this preparation for impregnation. In the hands of such experienced men as those I have named, a cross is almost certain as to its results, and success seems surely to follow. Mr. Morris is very sanguine that in the Pelargonium called reticulatum, which is so curiously marked in the leaves, like the Japanese honeysuckle, he will be able to replace the yellow with scarlet. When this is accomplished, it will give us a decidedly new race, which may possibly prove to be equally valuable with that of which the renowned Mrs. Pollock is the type.

If these gentlemen could be induced to give the floral world some account of their experience and success in the art of cross-breeding, they would certainly confer a great boon on those cultivators who are anxious to keep this little island far ahead of the rest of the world, in regard to the production of objects for beautifying the earth's surface. I, for one, should hail such information with joy; and I am sure many others would do likewise.

Woolwich. H. CANNELL.

NEW FLORISTS' FLOWERS.

SOME of the old florists, who have ardently longed for the return of that time when their favourite flowers shall be once more in the ascendant, may take heart from the fact that Cinerarias are again winning honours, and so suggesting that named varieties are being again sought after. At the meeting of the Floral Committee, on the 6th of April, a First-Class Certificate was awarded to *Cineraria Orb of Day*, exhibited by Messrs. F. and A. Smith, Dulwich; it is a very fine variety, with the florets unusually stout and smooth, of a rich, bright rosy-crimson, white at the base, forming a narrow circle round the pale disc, and with a thin line of bright deep rose separating the white from the crimson; the colouring of this flower is superb, but it has a tendency to reflex. Messrs. Dobson and Sons, Isleworth, had another variety, called *Princess Teck;* white, with a dark disc, but inclined to coarseness. Other new varieties were shown, but not in a condition to call for special notice. In the way of new *Azaleas,* Messrs. F. and A. Smith had *Advancer,* a taking flower of a clear rosy-pink hue, but said by competent judges to resemble too closely Frost's Perfection, sent out a few years ago. Messrs. Veitch and Sons, Chelsea, exhibited a group of plants of *Azalea James Veitch,* a variety that was thought very highly of at the International Horticultural Exhibition at Ghent last year; the flowers are of a remarkably bright deep rose hue, but they were shown small and rough, as if they had been pushed on too rapidly into bloom. *Primula sinensis fimbriata alba magnifica,* a fine white form of the single Chinese Primrose, the flowers produced on red stalks, was shown by Mr. B. S. Williams, Holloway; this was not so pure or distinct in character as one exhibited by Mr. W. Paul a few weeks since. The type of flower shown by Mr. Williams has this season been observed on several occasions, and is not so novel as he would seem to suppose. There is also a tendency on the part of all white Primulas with red stalks to come striped, or flaked.

—— The method of extracting the seeds from Cedar cones by splitting, is tedious, and often injurious to the seeds. M. Delépine, of Angers, states that the plan he adopts is much simpler, and better. About February the cones are buried at a depth of two feet underground, in sand; they remain thus for a month or two, after which the cones scale easily without force, and the seeds are then picked out and sown immediately, and being swelled, they germinate at once.

—— Double German Wallflowers are highly recommended at this season for their beauty and fragrance. Their culture is simple—merely to sow the seed in April in a light warm soil, or a gentle hot-bed in the open air, to transplant them to rich soil early in June, and in October to pot, three in a pot, into 10-in. or 11-in. pots, and place them in an orchard-house. In March they put forth their glorious spikes of flowers, often from 2 ft. to 3 ft. in length. These fine flowers have been obtained by the German florists; and the variation in colour is very remarkable, some being dark brown, others blue, others grey, and others shades of yellow, from straw to gold.

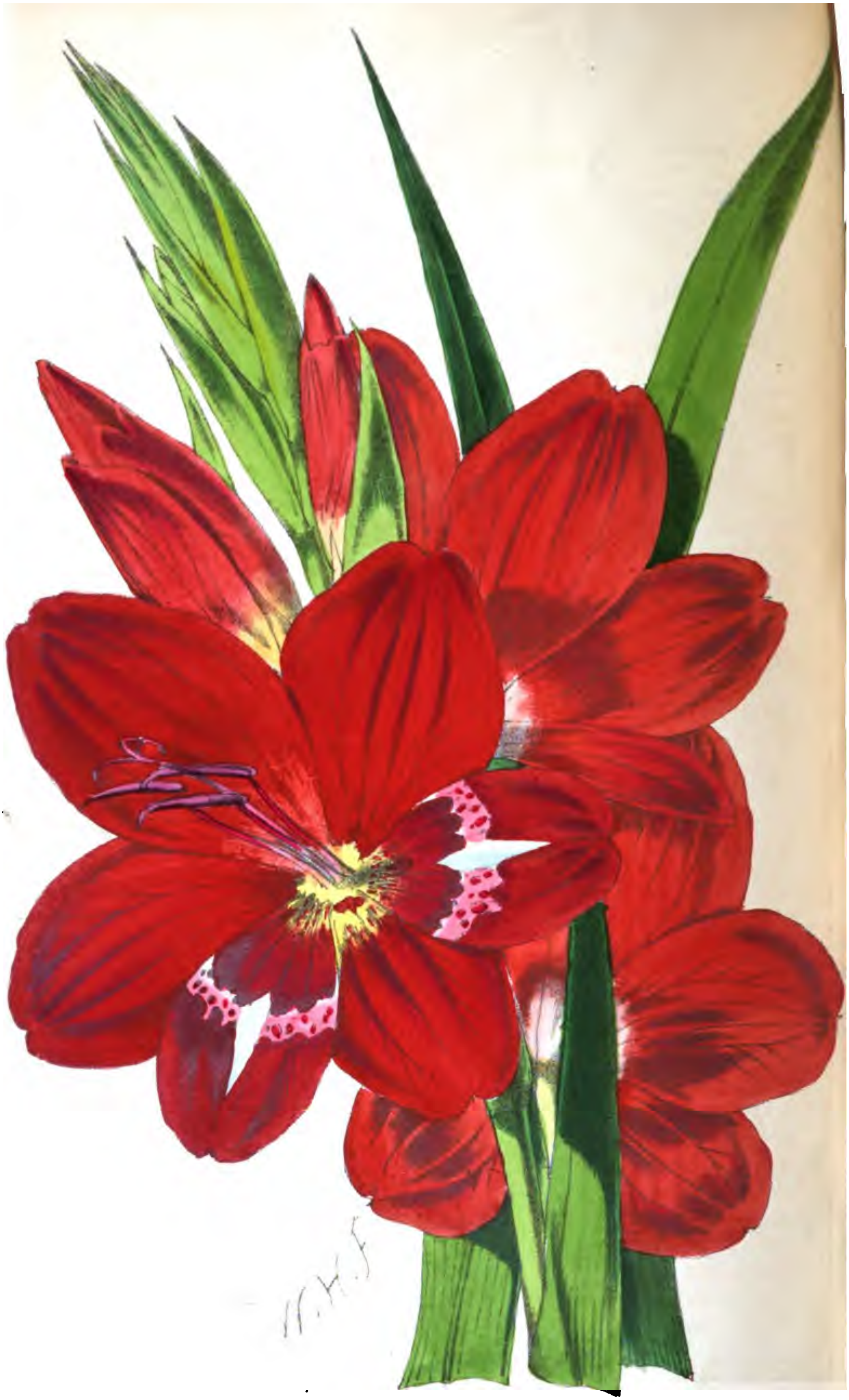
—— To have a constant supply of Broccoli, Mr. McIndoe recommends, for autumn and early winter use, the Bishopthorpe strain of the true Walcheren, a sort rarely seen now. This is sown in the first and last weeks of June, is planted after early Potatos, and is in use from October till Christmas. After this none equals Backhouse's Winter White Protecting, which is in use from November till February, and is succeeded by Frogmore Protecting, and Melville's Hardy Scotch, a grand Broccoli; these being again succeeded by Cattell's Eclipse, which generally lasts till the beginning of June. The great difficulty is to get the sorts true to name.

—— New varieties of Potatos seem to be causing some excitement in America. The Early Rose, a sort which is highly spoken of, has stimulated a host of competitors. Among these, the Early Prince, a seedling of the Early York, is much commended. It is white inside and out, rather longer than broad, slightly flattened, with the ends nearly equal; it grows large in a good soil. Grown side by side with Early Rose, it proved five days earlier in ripening, and was much larger. It is said to be edible as soon as large enough to use, to have a fine flavour, and to cook dry. The originator, Mr. Harrington, Geneva, New York, claims for it that it supersedes the Early Rose. Another novelty is Climax, a seedling of the Early Goodrich. The tubers of this sort are quite smooth, shaped like a cylinder swelled out at the centre, occasionally slightly flattened, and terminating rather abruptly; the eyes shallow, the skin netted, the flesh white and solid, and boiling dry and floury. It is said to be of superior table quality, nearly as early as Early Rose, fully equal in productiveness, and keeping as well as the Peachblow.

—— The Tulips in Hyde Park have been remarkably effective this season, and have shown how valuable these gay flowers are, when properly used, for Spring Decoration in town gardens, as well as in those which rejoice in purer air. The most effective sorts were—*Doubles:* Rex Rubrorum, Tournesol, New Yellow Tournesol, Rosine, Titian, La Candeur, and Roosenkroon. *Singles:* Vermillon Brillant, and Yellow Prince.

—— One of the most beautiful plants we have seen for the purpose of Table Decoration is a hybrid Sonchus, raised between Sonchus laciniatus and S. gummifer, in the garden of W. Wilson Saunders, Esq. These Sonchuses, grown to a single stem, and furnished down to the pot with their elegantly cut drooping leaves, which are almost transparent under artificial light, form admirable objects for the purpose above-mentioned.

—— Under the name of Japonicas, the fruits of the Japan Medlar (*Eriobotrya japonica*) have been recently sold in the London markets, and also in the streets by the hawkers. The fruit would form a handsome addition to the dessert table, and has an agreeable sub-acid flavour. Some few years since, fruits of the Chinese Jujube (*Zizyphus sinensis*) were sold in a similar way, under the same name.



Gladiolus cruentus.

GLADIOLUS CRUENTUS.

WITH AN ILLUSTRATION.

IN the subject of the accompanying plate we have a very beautiful and entirely novel species of the popular genus Gladiolus. It was received from Natal by Mr. Bull, of Chelsea, with whom it flowered during the past summer, when our figure was taken. As will be seen from Mr. Fitch's excellent representation, it is not only a very showy plant, but also one of a very distinct character, and we believe it will be welcomed as a grand acquisition for the flower-garden, on account of its vigorous habit of growth, and its large brilliantly-coloured flowers. It will probably be also of great value to the hybridizer, and may be expected to impart some novelty of feature to the popular varieties of this favourite flower. As a species it is remarkable for its almost regular perianth, with blunt emarginate segments, but it has entirely the habit and aspect of the ordinary garden varieties of Gladiolus.

The plant produces a tall scape, 2 ft. high or upwards, furnished with long flag-like glaucous leaves, nearly an inch wide, the scape terminating in a distichous spike of about a dozen large broadly-campanulate subringent flowers of a bright blood-red colour, the segments of which are obovate or oblong-spathulate, and emarginate, the upper ones being more prominent, somewhat larger than the lower, and uniformly coloured, while the lower smaller ones are somewhat recurved, crimson at the base, and scarlet at the apex. The two lateral ones of the lower lip are marked about half-way down with a white zone dotted with crimson, which on the exterior edge runs out into a long point, like the flame of the florists' tulip. The base of the segments, where they pass into the slender tube, is marbled with yellowish green. The stamens have red filaments, supporting linear purple anthers.

M.

NOTES ON NOVELTIES.

THE Floral Meetings of the past month or two have yielded fewer novelties than usual, amongst the subjects classed as New Plants. During April, Mr. Bull brought forward a *Ficus eburnea,* a stove shrub introduced from India, having bold ovate, smooth, shining green leaves, marked with white ribs. The pretty Indian *Cœlogyne Goweri* came from Mr. Williams; it is white, the lip marked with a bold yellow blotch, the edge of which is traced out by a red line. The curious and distinct-looking Indian *Lilium Thomsonianum* was shown in a tolerably well-grown condition by Mr. G. F. Wilson, from a bulb communicated by M. Leichtlin; this remarkable plant, with its narrow-petaled pink flowers, has been referred to Fritillaria, and has much the aspect of an Anthericum, but the authorities decide that it is a true Lily. An *Agave De Smetiana* came from the garden of W. W. Saunders, Esq.; this is one of the dwarf tufted-growing sorts in the way of A. Verschaffeltii, but the leaves have a whity-brown margin, and bear coarse irregular reversed marginal spines. The pretty little *Cymbidium tigrinum* came from Messrs. Veitch and Sons' collection; it has long olive-coloured sepals and petals, and a white lip, transversely barred with purple. A beautiful variety of *Odontoglossum Alexandræ*, called *Warneri*, obtained a first-class certificate, as did most of the preceding; it has the sepals tinted with rose, and bearing a few large bronzy spots, the petals pure white, and the lip yellow at the base and white at the tip, having a great central blotch of bronzy brown. A beautiful little stove basket Fern, *Davallia hemiptera*, from Borneo, which has a creeping rhizome, linear fronds, and dimidiate lobate pinnæ, came from Messrs. Veitch, who had received for it a first-class award on a previous occasion.

At the meeting held in the early part of May, Messrs. Standish and Co. had a fine distinct new half-hardy Fern, *Struthiopteris orientalis*, a species which has been found on the mountains of India, but in this case was imported from Japan; it has spreading ovate pinnato-pinnatifid sterile fronds of a pale-green colour, and the erect fertile fronds have leathery pinnæ, which bear dark brown sori, covered with entire or lobed involucres. The very distinct *Vanda Denisoniana*, a new species, from Moulmein, with acutely and unequally bilobed leaves, and waxy flowers, of which the sepals and petals are obovate, whitish with a creamy tinge at the tips, and the lip is dilated and two-lobed at the apex, with a stain of yellow and a few red lines near the orifice of the spur, came from Messrs. Veitch; who also had *Brassia Lawrenceana longissima*, a Costa Rica plant, with the lateral sepals six inches long, yellowish-green, with dark blotches near the base, and a greenish-yellow cordiform lip dotted with brown. The Society's Chiswick collection furnished *Dieffenbachia nebulosa*, a hybrid between D. Weirii and D. maculata, remarkable for its stocky habit and spreading leaves, which are coloured in a clouded manner with yellowish-green in the centre, darker green at the edges, and spotted here and there with white dots. Mr. Bull, of Chelsea, produced *Geonoma zamorensis*, a good looking Palm, with a few pairs of broad pinnæ and a bilobed apex; also *Podocarpus Maki variegata*, a Japanese shrub, with linear leaves edged with white. *Dendrobium xanthophlebium*, an Indian species with slender stems, oblong acute leaves, and moderate-sized whitish flowers in pairs, having the three-lobed lip covered over with bright orange reticulations, came from Mr. Bateman's garden. These all obtained first-class certificates. *Croton Wrigleyanum*, a sport from variegatum, with large central blotches of yellow, instead of the usual yellow venation, was sent by Mr. Shaw, of Manchester. *Acer rufinerve variegatum*, a fine Japanese Maple, which had been provisionally named Acer japonicum argenteum, and which came from Messrs. Standish and Co., had large palmatifid leaves, variously edged or mottled with white, and promises to be a very ornamental tree. The Peruvian *Epidendrum syringothyrsum*, from Messrs. Veitch and Sons, will probably develop into a very handsome species. In its imported state it has tall reedy stems, clothed with ligulate leaves, and terminating in a broad spike of bright rosy-purple flowers, which are set out on the long slender purple ovaries, and consist of stiff narrow sepals and petals, and a protruding fleshy lip, which is three-parted, and white towards the base. *Peperomia heterostachya,* from the same source as the last named, is a neat dwarf stove herb, with dark bottle-green elliptic leaves, marked by five or seven pale ribs, and of remarkably free blooming habit. *Iresine acuminata,* from Mr. Bull, is a plant coloured exactly like I. Herbstii, of which it appears to be a sport, but having flat ovate acuminate, instead of bilobed puckered leaves, as in the form commonly grown; the same plant came from Messrs. Veitch, as Achyranthes acuminata. T. Cooper, Esq., of Reigate, sent *Toxicophlœa spectabilis,* an interesting evergreen shrub from Natal, remarkable for its close resemblance in general features to an Ixora, though belonging to a totally different family—the Apocynaceæ; it has elliptic dull green leaves, reddish on the under surface, and the white star-shaped flowers form close heads. *Coleus Beauty of Widmore,* is a sport from Lamontii, showing silvery variegation. The margins of the leaves are creamy-white, and the blotch chocolate-brown, passing to rosy-pink, the colours being analogous to those which appear in the Silver variegated Zonal Pelargoniums. M.

THE FAILURE OF THE APRICOT CROP IN 1869.

IN this locality, the Apricot crop, where not protected well, is this year quite a failure; even where the trees were covered with glass lights, the crop is very thinly set. On a long range of wall in the gardens here, the trees have always been covered with glass lights in the spring, and during the last seven years have never until this year failed to produce a full crop. All the trees of the Kaisha variety, and a few of the Breda and Musch-Musch, have set their fruit well; but the Moorpark, St. Ambroise, Royal Apricot, and Shipley, show only a scanty crop. There is no doubt but that the protracted cold and dull weather in March, was the cause of the Apricots setting so badly under glass, this spring. On examining the flowers, there seemed to be less pollen than usual, and during the whole time they were expanded, there was very little sun-heat or drying winds to disperse it. Peaches and Nectarines on a heated glass-covered wall have set plenty of fruit, but on the open walls they have set a very thin crop. Pears, Plums, and Cherries, not having flowered till the fine weather in April set in, show plenty of fruit set, and the finest Pears on pyramids and walls will have to be thinned to secure fine specimens. Although, in general, Apples when a good crop one year, do not bear so well the year after, yet this year they are loaded with blossoms, and promise again a great crop. The single and double-cordon apples on the French paradise stock are a complete mass of blossom, and the protection of them from spring frosts is so easy, that I predict those who have planted them will always secure a crop. Last year, although the cordons here were only planted in the beginning of March, I left a few fruit on each of the strongest to prove the sorts; but this year they promise to be wreathed with fruit so as to resemble "ropes of onions."

Welbeck. WILLIAM TILLERY.

THE BELGIAN PANSY.

HERE is a flower for everybody who has a garden, and one worthy of a place in every garden; nay, more, the garden that is without this beautiful flower is very deficient indeed in its spring decoration, and lacks one of the most useful as well as the most decorative of the plants available for that purpose. In this matter of spring decoration we have been too apt to assume that none are useful but such as are self-coloured, and, consequently, are adapted for masses, in this respect following too closely our stereotyped notions derived from summer bedding, by which we are disposed to value flowers only in proportion as they are adapted to produce striking masses of colour. Thus many really beautiful plants are set aside or neglected, simply because they will not produce that uniformity of effect so much desired.

But variety as well as uniformity has its charms, and in no spring flower can this great desideratum be so easily obtained as in the Belgian Pansy, which, if raised from seed even by thousands, will afford just as many varieties or shades of colour as there are plants. Of course, to perpetuate choice kinds, propagation by cuttings is essential, but to those who prefer the easiest mode of obtaining them, and are desirous of producing new and fresh faces, the raising of them from seed will prove the most suitable, as it will be also the most pleasing.

Perhaps some will ask why the Belgian Pansy should be thus lauded. Is not the English strain as useful for the purpose? Possibly so, to those that like them best; but from prejudice, or some other cause, I immensely prefer the foreign strain. I believe they possess a hardier constitution, and are more capable of resisting the heats of summer; they seed more freely, cover more ground, and from their greater diversity afford more variety. I must confess that in looking over a collection of English named varieties, however rich in colouring or perfect in outline they may have been, I have always felt a kind of satiety, as though there was too much of one thing; the yellow selfs were so much like each other, and the white and dark selfs also, and then the big staring belted kinds reminded me so much of men having broad clean-shaven faces, with a dark border of close-cropped whisker, and differing from each other only in a minute degree, that I have turned away from them to a bed of Belgians as if for relief, and have there found it. It may be that in these days of the rugged facial outline and picturesque beard of the human form divine, we have brought our ideas into closer union with the diversity of faces that is to be found among the Belgian Pansies; certain it is, that those lovers of beautiful flowers whose floricultural tastes have not been too closely moulded in the school of the old florists will greatly prefer the latter strain, and having little regard for straight-laced rules or defined laws of judging, will honour them as among the choicest pets of their garden.

In embarking in the cultivation of the Belgian Pansy, let no one be induced to purchase any of the cheap rubbish of seed sold under that name, because seed of a good strain cannot be sold cheap fairly. When, however, you have got your seed, sow it about the end of July, or the beginning of August, in pans or boxes, keeping them moist and slightly shaded from the sun. When the seedlings are large enough to handle, let them be pricked off into other boxes or into a frame, where they may be kept still shaded for a few days until they have become well-rooted. During the autumn, as beds or borders become vacant, they may be carefully transplanted to their permanent situations, and will form during the winter strong robust plants, that will bloom early, and continue to do so with very little care and attention for many months. Soil, doubtless, enters materially into the question of their successful cultivation, but, without doubt, they will succeed well on any moderately good loam. They will pay to have a soil made purposely for them, where there is either a stiff clay or much gravel. I find they do admirably on a soil of yellow loam, moderately enriched with rotten dung, and under such conditions they produce flowers of the richest hue; however, for all ordinary purposes, they will do well in any common garden soil. It is usual to recommend pegging the side shoots of the Pansy to secure them from the effects of the wind, and in the case of some of these Belgians that may be disposed to be leggy it is still desirable; but as a rule I have found the practice of top-dressing them with sifted soil, either that of old pot-earth or else the trimmings from the roadside, to be the most effectual preventive of damage from that cause, as the side shoots root freely into the top-dressing, and thus the plants acquire additional hold. This should be done, where possible, two or three times during the summer, especially just after a fall of rain, when the dressing helps to retain moisture in the ground, to the manifest benefit of the plants. It would, indeed, be a difficult matter to describe the extraordinary variety of colours to be found in a good strain of Belgian Pansies, varying from the purest white to nearly black, with a thousand intermediate combinations of shades; and it is in this feature they are so especially to be prized, as nothing contributes so much to create pleasure and interest in the flower-garden as continuous variety.

As subjects for exhibition at spring shows, Pansies should at all times hold a foremost place. Their cultivation in pots is not difficult, but for this purpose young, well-rooted cuttings of the best kinds obtainable should be used. These should be potted up in large 60s in the autumn, and kept growing on in cold frames, being shifted as necessity requires, until they are got into 24s or 16s, as the size of the plant may demand. By the end of April or the beginning of May, they will, with ordinary care, be found to be very beautiful and creditable subjects for exhibition. For general purposes, as decorative agents for the garden, it is best to raise a batch from seed every year, as these generally prove to be the strongest and most robust plants, although cuttings might be taken from some of the best kinds in order to perpetuate them. Seed, however, saved from good flowers, will invariably produce many others equally as good, and some among them of even better quality.

Old Shirley. ALEXANDER DEAN.

SUMMER PRUNING FRUIT TREES IN HOT SEASONS.

OBSERVING some remarks on the effect of drought on Fruit Trees, &c., by my friend Mr. Wighton, I beg to state that I have found many of his statements (p. 52), applicable to our fruit trees here at Dalmeny Park, with these exceptions, that our peach and apricot trees had a very indifferent show of blossom on them in the spring of 1868, which I attribute to the unfavourable weather of the autumn of 1867. This year it is quite the reverse, as our peaches and apricots look splendid, and so do the apple and plum trees, which is no doubt owing to the fine summer and autumn having thoroughly matured and ripened the wood—a condition of the first consequence as regards enabling the blossom buds to withstand vicissitudes of weather. I may add that last season our pears were very much larger than I ever previously saw them. The Winter Nelis, on the walls, was quite double the size it attains in ordinary seasons; but as regards its flavour and melting properties, it was much inferior to what it generally is, some of the fruits being even gritty. This, I fancy, may be attributed to two causes: first, lack of moisture, and secondly, premature ripening. The fruit, moreover, did not keep so well as usual.

I quite agree with Mr. Wighton's remarks relative to non-summer pruning, in so dry a season as the past. In corroboration thereof, I may mention that we have here eight Morello cherry trees on a wall with a north aspect. When I came here twenty-five years ago, there were sixteen trees; but I cut away each alternate tree, and the eight now completely cover the entire space. Out of curiosity, I lately measured one of them, and found it to cover 750 superficial feet. Most persons who have seen these Morello cherry trees say that they have never seen finer. Now, I have never summer-dressed these trees. The dressing was not omitted out of carelessness in reference to nailing them, as some might judge, for when denuded of their foliage in winter they will bear the inspection of any one. My reason for leaving the breast-wood on was, first, that it might get the influence of the sun to ripen it; and secondly, that this breast-wood might keep the nets away from the branches, so as to allow a free circulation of air. These conditions were realized apparently without detriment to the trees in respect to their extension and fruitfulness, for I rarely miss having a good crop; and though the trees are now old, I have on many occasions, with fruit gathered from them, taken the first prize for the finest Morello cherries at our exhibitions. Having so large an extent of Morello wall, I thin out the young wood well at pruning time, my object being to get fruit of good quality in preference to a quantity of an inferior character.

Dalmeny Park. WM. MELVILLE.

THE ORNAMENTAL SIDE OF FRUIT-GROWING.

IT is somewhat singular that such a sharp line should have been drawn between objects of utility and things of beauty. But so it is, or rather has been, for I think we are improving in this respect. Still, there seems a singular, I had almost said a perverse, tendency in many minds to limit their pleasures by making their plants serve only the one primary purpose for which they are grown. In this respect we are not straitened in nor by nature, but we are straitened in ourselves, and cut down by about one-half the rich revenues of gladness that nature, in her goodness, sheds down at our feet.

It seems full time that the distinctions that have been so sharply drawn in Horticulture between objects of utility and ornament should be utterly and finally abolished. For in truth, there is no such distinction. No one thing that we grow is destitute of lines or form of beauty, and the mere fact that it is also useful ought not to hide these from our eyes, but rather render them more apparent. In this sense, beauty clothed with utility is adorned the most. For beauty and grace are never so irresistibly charming as when discharging duty, or engaged in useful service. Thus ought our estimate to be formed when judging of plants that add to their beauty the higher adornment—if I may so express it—of utility, the capacity of service, the ability to add to our enjoyments and nurture our lives.

The general recognition of this higher law would prove a clear gain to the pleasures of gardening. It would tend to break down that sharp barrier that has been interposed, without reason to sanction it, between the ornamental and utilitarian departments. It is necessary, however, to be clearly understood upon this point. I do not advocate any uniting of the two departments, so as to make them both alike, no invasion of the kitchen into the flower garden, nor any great inroads of the flower garden into the kitchen department. A few lines of floral beauty may be run along the main walks, but this is all that ought to be admitted; and even this is not needful to render a kitchen garden both interesting and beautiful. On the other hand, fruit trees might approach within sight of the flower garden with positive advantage, and their presence might be welcomed in pleasure-grounds and ornamental woods as being amongst the most beautiful objects for such positions.

The kitchen garden may, however, be made highly ornamental without a flower, specially so called, at all. Order, cleanliness, and health can be had in every garden, and these are most important elements of beauty. In fact, a well-ordered garden opens up endless sources of delight. A place for every crop, and every crop in its place; bushes and trees arranged for effect in rows, and supporting the walks in stately lines of regular forms, originate that peculiar satisfaction which the consciousness of order and design never fails to impart. Of the charm of perfect cleanliness and complete health it is needless to write ; but this I will say, that there is more real pleasure in looking at a cabbage brake in health, cleanliness, and order, than upon a bed of flowers distinguished by the absence of such qualities.

These may be said to be the commonest elements of beauty, everywhere present, and accessible to all ; but much higher ground than this may be taken in approaching fruit trees on their ornamental side. It may be boldly affirmed that looked at simply as ornaments they have no rivals, and few equals. During the flowering period our kitchen garden walks lined with conical apple and pear trees were preferred by visitors to houses full of Azaleas or tropical plants, or to spring borders alive with beauty, and robed with fresh life. The only spots that competed with the trees in attractiveness were banks clothed with masses of forget-me-nots, rivalling the blue sky itself in their long sheet of colouring, set off with counter masses of *Arabis, Primulas, Aubrietias*, violets, &c. Pear trees are in some respects more striking than Apples for this purpose, inasmuch as the different varieties flower more together, and their blossoms are all white. Cherries or Plums are indescribably effective, and Peaches and Apricots are almost as much worth growing for their blossom alone, as Almonds. In the South and West of England many Peaches or Apricots might ripen fruit as standards or conicals.

Though the Apple does not produce such a dazzling effect all at once, it has more variety of colouring, and continues longer in blossom than almost any other fruit tree. In colour it reaches over the entire distance, through an endless series of the most exquisite pinks, from scarlet to the most spotless white ; and in form, substance, and colour it has no rival in beauty among fruit trees, nor scarcely among flowers. I am told that a large Devonshire orchard in blossom is a sight never to be forgotten, and I can readily believe it. But while comparatively few can enjoy such a sight, we can all have the satisfaction of beholding much beauty at home, if our eyes are only opened to see it, and our taste educated to dispose of the material at our command to the best advantage.

Nor does the ornamental character of these trees end with their blossom. Most of them may be classed among fine-foliage plants. It is most absurd to limit this term to plants distinguished either for the magnitude or gay colouring of their leaves. All leaves are beautiful, though not all alike so. And then are not fruits likewise ornamental ? We grow useless Solanums, and Tomatos and Capsicums of but little value, solely for ornamental purposes, and fail to appreciate the higher claims of Apples, Pears, Cherries, Peaches, Apricots, Plums, aye, even Gooseberries, Currants, Raspberries, and Strawberries, to admiration for their exquisite beauty of form and colour. Yet what pen or pencil has ever done full justice to the intrinsic grandeur, delicacy, or grace that characterize such fruits, as they nestle together in rich masses upon cushioning beds of rocking or resting leaves? And then how rich and glowing are the autumnal tints of many of the leaves of fruit trees and bushes, revealing all the rich orange of the maple and chestnut, and the glowing scarlet of the rarer liquidambar! As I have already adverted to this branch of the subject in the *Gardeners' Chronicle*, where I recommended that the Grape Vine should be grown as an ornamental plant, I will not further pursue it here. In fact, this paper is simply fragmentary, not exhaustive,—a mere indication of the mine where inexhaustible treasures lie hid, and not an attempt to exhibit the treasures themselves in either their magnitude, number, or glory.

I will therefore turn from noting our ornamental wealth, which is too often literally hidden beneath the gross veil of a grovelling utility, which gives up the kitchen garden to the cook and the stomach, and banishes order, cleanliness, and taste as entirely from it as if the recognition of the claims of the one were antagonistic to the rights of the other—which they are not, and advert to the more extended use of fruit trees, specially for ornament, within what is called, by way of pre-eminence, the domain of the beautiful itself. Is there any good reason why an almond, a thorn, a chestnut, a beech, or an oak should be admitted within the domain of floral art, and the peach, cherry, apple, medlar, quince, plum, or the pear be shut out? All the former are fruit-bearing trees as well as the latter; they differ chiefly in the fruit of the one class being comparatively worthless and useless, while that of the latter is valuable and grateful to man. Is the idea of utility, then, so incongruous with the enjoyment of landscape art that the beauty of things must sink in proportion as their usefulness increases? This can hardly be accepted as the reason for shutting out our beautiful fruit trees from pleasure-grounds. Else the oak tree would lose dignity, and be robbed of its grandeur, when its acorns were given to the pigs, or husbanded as winter food for pheasants. Possibly some reader may smile at this, and perhaps Loudon or Price may have given better reasons for the exclusion of fruit trees from the ornamental grounds. I have no time to look up authorities; if I had, I would rather use it to recommend a liberal and fearless introduction of our highly ornamental fruit trees, intermixed among other flowering plants in our pleasure-grounds, than in citing the highest authorities against the practice. Many of these are equal to our best flowering shrubs as ornamental objects, and nearly all of them would add a new and much needed charm of grace and variety to our shrubberies.

In plantations, too, such trees would prove invaluable, lighting up the gloom of broad masses of sombre foliage with a spray of brightness wholly their own, as do the magnificent Wild Cherries in the hill-side woods at Belvoir, and in many other places; while the autumnal fruits impart the idea of a prodigality of riches, or have the merit of filling the hungry birds, to the safety of our garden fruits. But there is no good reason why a portion at least of the fruit should not be preserved. Carefully netting might baffle the birds, and pleasure and profit be made to go together. Thus might the eye be more fully satisfied with beauty, the palate gratified with an increase of good things, and artistic taste extended and improved by a liberal scattering or grouping of fruit-bearing trees throughout pleasure-grounds and plantations all over the kingdom.

Hardwicke House. D. T. FISH, F.R.H.S.

PROTECTING CHOICE YOUNG SPECIMEN TREES.

THERE is much to be done by a judicious selection of the sites in which young specimens of newly-introduced and choice trees are to be planted. After they have become inured to our climate, and we can save seed and raise seedlings, they may be planted like other things—anywhere; but in the case of all newly-introduced or tender trees, &c., my rule is, that if I have not natural shelter from south-east, round by north to west, or south-west, I make a temporary screen, and only admit the sun on the plants in winter after it has got round near to the south. Thus the hoar frost—that great enemy to all fruits, vegetables, trees, and shrubs—is subdued, and by the time the sun reaches the plants the atmosphere becomes changed, and no injury takes place, but the trees have the real benefit and enjoyment of being well dried and made warm and comfortable, by sundown. It is astonishing to see how the new Japanese plants grow and luxuriate through adopting this simple method; in fact, anything, whether hardy or not, can thus be made to thrive, and the first year after planting may be induced to start into luxuriant growth which is afterwards maintained. What is the use of making a careful preparation for a healthy thrifty plant of any kind, and yet to plant it without affording it the necessary amount of shelter?

The secret of our having here such numbers of fine and rare trees is that I always adopt the rule of planting rather high, on raised mounds, according to soil, climate, exposure, and situation; and that I always form a temporary shelter at once, by means of any easily come-at-able evergreen boughs, branches of furze, &c. The method is remarkably simple. If I have not got stored up, as I generally have, bundles of evergreen prunings, I go to the nearest shrubbery and thin out some branches; these are stuck into the ground at the required distance, in a circle around the plant, and are then bent down, and the tops interwoven together. Thus, in less than five minutes, I have a perfect screen of basket-work of, say, 3ft. high, for the newly-planted young tree. If the shelter is required to be of a greater height than this, it is only necessary to stick another tier of branches into the rim of the basket-work, and interweave them as before. Then, when winter comes on, I stick another row of branches into the rim, pull them together at the top, and give them one tie with an osier or piece of rope-yarn, and in a couple of minutes I have a dome formed over the top, which, if too thick on the side where the sun is to be admitted, can be cut with the knife or pruning scissors to the desired thickness. In this way we may provide, in a very few minutes, a neat and efficacious shelter or screen, which will afford just as much air and light as may be desired.

By this simple mode of protection almost any plant may be made to thrive, and in two years it will have made more healthy luxuriant growth, and become better established, so as to show more of its true character, than a neighbouring unsheltered plant would have done in ten years. A friend to whom I sent some choice young conifers, and whom I advised to protect them in the way above explained, failed, attributing his discomfiture to the climate. He had, it seems, stuck in some loose boughs, which the wind twisted about so that they did more harm than good. But when he came here and saw how easily the whole thing was done, he threw up his arms and scratched his head, in sheer astonishment at its simplicity, and by way of admiration of its efficacy.

Bicton. JAMES BARNES.

NOTES ON LILIUM GIGANTEUM AND AURATUM.

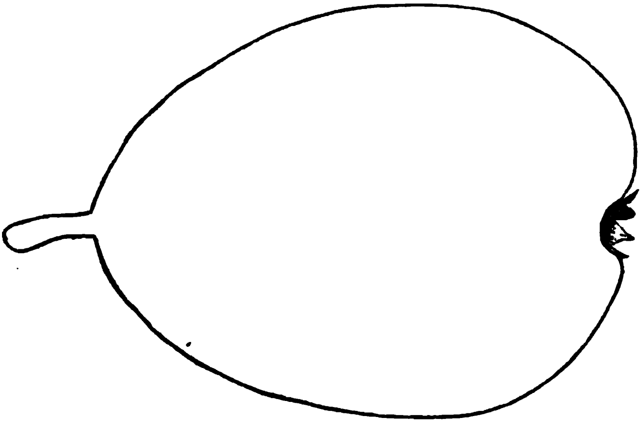
WE have all been familiar from our youth up with the Lily, the early mention of which in the Sacred volume has tended to make a deep impression upon our memories, so that the name, like that of the rose, the violet, the pink, and other favourite flowers endeared to us by early associations, seems to convey a meaning which no other term could supply. There are a host of plants which share the name of Lily, such as the Guernsey Lily, the Day Lily, and the sweet Lily of the Valley; but it is to one or two species of the genus *Lilium*, the true Lilies, that my present remarks will be confined—to *Lilium auratum* and *L. giganteum*, undoubtedly the finest and most admired species of the family. They have been grown and flowered in fine condition in plant structures, and the former has also shown itself to be well adapted for window-culture; but it is with the view of extending their cultivation by introducing them to the open garden, that I offer the following suggestions. I have proved *L. giganteum* to be so perfectly hardy in this northern climate, as to endure our winters without any protection. My first success in flowering it was in 1865 (see FLORIST AND POMOLOGIST, 1866, p. 107). The plant, after flowering, was taken up, and had all its offsets removed, the latter being replanted at once in some warm sheltered situation. I had the satisfaction of seeing one of these small bulbs produce seven flowers upon a stem about 6 ft. in height last June, and four others are throwing up fine strong flower-stems this season. These facts serve to prove that open-air culture may safely be recommended for this noble species of the Lily family. When the spot has been selected for planting, a pit should be dug out, 2 ft. in depth, and about the same in diameter, and filled up with a mixture of one-half of loam, and one-half of equal parts bog-earth and leaf-mould. In planting the bulbs should only be just covered, and if the summer is dry, two or three liberal waterings should be administered. This treatment will secure strong and healthy bulbs. When throwing up its strong flower-stem in spring, this lily, from its stately habit, is a remarkable feature in the garden, contrasting strongly with everything around it.

The general structure of *L. auratum*, with its heavy head of flowers and leggy stem, would seem at a first glance to render it unsuitable for out-door planting; and as, like the Gladioli, the season is far advanced before its flowers open, and even then they are not of long duration, it would be set down as ill adapted for planting by itself. The plan which I take to obviate these defects with the Gladiolus is to plant wide, and to grow between the rows mixed varieties of double-branching larkspurs, kept pegged down. When sown in a little heat, and nursed on to form strong plants, they flower on throughout the season, and assist wonderfully in giving a character to the group. I purpose adopting a similar plan with *L. auratum*, but instead of using larkspurs, I shall plant it in a mixed bed of sub-tropical plants, and I believe its massive head of flowers will contrast to good effect with the surrounding foliage. The first important point is to select the warmest and most sheltered situation to be found. The beds should be trenched deeply, and in the operation thoroughly decomposed manure should be well incorporated with the soil, or should the latter be a strong heavy loam, a liberal portion of sand and leaf-mould may be added with advantage. A bed composed of the following plants, arranged according to taste, surrounded by an edging of a single row of *Centaurea ragusina* and pine-apple beet planted alternately, will have a fine effect:—*Canna* of sorts, *Ricinus* of sorts, *Humea elegans, Arundo Donax variegata, Tritoma Uvaria, Lilium auratum, Gladiolus* of sorts, and variegated maize. The plants will require to be well established, and carefully hardened off before they are turned out. The list might be greatly extended, but I have confined my remarks to those plants which I have found to succeed well here.

Gordon Castle. J. WEBSTER.

WASHINGTON PEAR.

THIS is a small early Pear, of more than average merit as regards flavour, hardiness of constitution, fruitfulness, and general usefulness. For flavour, and the texture of its flesh, it is altogether first-class. In appearance, however, it is much wanting, the fruit in general being small and rather scrubby-looking, the outline here given being that of a full-sized fruit, while many of them are considerably smaller. It may be thus described:—Fruits below medium size, obovate, regular in outline, the surface even. Skin smooth, of a pale green colour, slightly speckled with russet, like the Doyenné Blanc, but as the fruits ripen after being gathered, the colour in most cases changes to a uniform pale yellow. Stalk about half an inch long, moderately stout. Eye rather small, with the segments erect, open. Flesh white, perfectly melting, very juicy, the juice rich and sweet, a little musky, very refreshing, and grateful to the palate. Tree hardy, and a prolific bearer as an orchard standard. Season, beginning of September, extending to the middle or end of the month. The fruits ripen in succession, like those of the Seckle, as they fall from the tree; it is, however, better to gather them when they begin to fall, as by that means their season is prolonged, and they are also of better flavour, than if allowed to ripen on the tree.



This is a Pear of American origin, as its name implies, and rather an old one too; yet it has somehow or other been strangely neglected, and is at the present time almost unknown, having been passed over for more showy, but less worthy varieties. To our knowledge, it has never yet been figured or described. We have, however, three manuscript notices of it, beginning with that of Mr. R. Thompson in 1829, all speaking of it in the highest terms. To this we add our own experience of it for several years, and heartily recommend it as a good and useful early Pear. B.

THE STOCKS OF APPLE AND PEAR TREES.

MUCH has been said and written respecting the influence of the stocks on Apple and Pear trees. In general, dwarf apple trees are grafted on "paradise" stocks, and pears upon the quince, with a view to their being made bushy; while standards of both kinds are respectively worked on crab and pear stocks to increase their growth. But though both methods are in common use, the practice just named hardly accords with the theory that the tops of trees have as much influence on the roots as these have on the branches. This being admitted, the grafting of a rank-growing apple on a weakly or "paradise" stock will only tend to give more vigour to the roots; and the reverse will follow from grafting a tender kind upon a crab or hardy stock. The same remark is applicable to pears, both on quince and wild-pear stocks. Now, I observe that cultivated apple and pear trees are of stronger growth than wild ones; at least, crab trees are seldom so large as apple trees of the orchard. This confirms what I have said as to the tops of trees having much influence on the extension of the roots—a proposition which, though it may be new to some persons, is strictly true.

In the case of the grafted trees, possibly they derive more nutriment from the influence of the sun upon their leaves. The same is to be said of seedlings or ungrafted kinds, the growth of which varies according to their peculiar habits, and continues to do so after they are grafted for increase upon stocks which are raised from pips or seeds of apples and pears. Those having small leaves and spines—or thorns, come nearest to the crabs and pears of the hedgerows; while the free-bearing sorts of both kinds are generally of dwarfer habit than the less fruitful ones. The Hawthornden Apple and Gansel's Bergamot Pear are good examples of this. Some think that grafting the less fruitful kinds upon the tops or branches of the "free-bearing" ones will tend to greater fruitfulness. I have tried the plan myself, but with little or no success. Indeed, it could not well have been otherwise, for grafting does not alter the original virtue of the bark or rind of the adopted branches, while these have their proper nutriment from the influence of the sun upon the leaves, as already named; and it is on the peculiarities of texture in these that the varieties of the fruit depend, though the quality may vary according to their state of health.

Although I have made the above remarks on apple and pear stocks, and am well aware that they are the best for practical use, yet I repeat that success depends more on the natural or peculiar habits of the grafts, than on that of the stocks.

J. WIGHTON.

AILANTUS SILKWORMS.

THE Ailantus Silkworm (*Bombyx Cynthia*), like the Yama-mai oak variety, is a native of Japan, and is deserving the attention of silkworm-rearers in general. Whether for profit or amusement, it is an interesting insect. Although the cocoons are not easily reeled, still there is a sale open for them, for they are used for producing spun silk, which is very durable and strong. The amateur will certainly be pleased, if his only reward be the obtaining of specimens of the very beautiful moths.

Ailantus Silkworms are easy to rear, being so hardy as to succeed in the open air; but I think the best plan to follow in order to rear a few as an amusement, would be to do it on Ailantus plants in an airy room. The plants could be planted in large pots or tubs. This year, I dare say, the eggs will hatch early. Some method of protection seems desirable other than that of putting the young larvæ into muslin bags, which is only practicable with a small quantity. Last year I sent eggs and young worms through the post into various districts for trial; but the great heat, I believe, was disastrous, killing not only this variety of silkworms, but also the oak variety, &c. Therefore, I would propose that trials should be made in different ways,—indoors, in sheds, in the shade, with south and north aspects, &c. One thing is certain, namely, that persons producing Ailantus cocoons can now dispose of them for manufacturing spun silk; therefore, there is some inducement held out for promoting the rearing of these silkworms in England. I shall be glad if my friends would note their experiments this year, and communicate any information they may thus obtain.

Old Catton, Norwich. LEONARD HARMAN, JUN.

SEASONABLE HINTS FOR AMATEURS.—JUNE.

BEDS and borders should now be planted as soon as possible. Ranunculuses, Tulips, Hyacinths, and other bulbs may be carefully lifted and laid in to ripen off, before being stored away; this will liberate the beds for "bedding" plants, which should be got in without delay. Dahlias and tender annuals generally do best when not planted out before June, but they should be got out as early in the month as possible, so that the whole place may be put into a neat and orderly state, in which it should be kept throughout the entire season. Roses will now require much attention; they should be looked over, the shoots properly regulated, and the weak ones tied up; all bad buds should be removed. Caterpillars are often very destructive to roses, eating the leaves and buds wholesale. The best means of destroying them or keeping them down is to look frequently over the bushes, and wherever they are perceived, to pinch the leaves with the fingers. In dry weather Green Fly is often very troublesome, but syringing two or three times with weak tobacco-water will clear the plants of them.

As many as possible of the hard-wooded plants past flowering should now be removed to a sheltered situation in the open air, where they will be partially shaded at midday, but fully exposed to the morning and evening sun. This will allow the greenhouse to be kept warmer whilst the grapes are "setting." The plants will also require less attention than if kept in the house. They should be set level and on a hard solid piece of ground, so that worms may not enter the pots, and stop up the drainage. Plants requiring shifts should at once be put into larger pots, always taking care that these are clean and well drained. It is always a safe plan not to overpot any hard-wooded plant, and in potting the soil between the ball and sides of the pot should be well pressed down and made solid. Tender annuals should be encouraged to grow by shifting into larger pots, using rich soil, composed of loam and rotten dung, or peat and leaf-soil mixed in different proportions according to the nature of the plants. Soft-wooded greenhouse plants in pits and frames should also be encouraged to grow by increasing the size of the pots as they require it. Watering, which should be done in the evening, must now be well attended to.

Owing to the fine seasonable weather of the past month, vegetables of all kinds in the Kitchen Garden look in a vigorous, healthy, growing condition, very different to what they did in June last year. Peas and Beans, having been in flower early last month, will be fit for use early. The main crops of some kinds of vegetables having been sown, the principal work now to be attended to is to thin them out properly and in time, and to stir up the soil between the rows frequently with a hoe. A small row of Celery for early use should now be planted in a well-manured trench; but the principal crop for autumn and winter use should not be planted out before next month, as when planted out early, should dry weather set in, it is apt to "run," and it is seldom so nice and tender as when grown quickly on later in the season. Good breadths of Broccoli of sorts, Brussels Sprouts, Savoys, and Borecole should be planted out about the middle of the month. Cauliflowers for successional crops, also Lettuces, should be planted. Peas, Beans, French Beans, and Scarlet Runners for late crops should be sown in the early part of the month. Turnips and Spinach for succession should be sown. Tomatos should be planted and nailed up to a south wall. Sweet Basil and Marjoram should be planted on a south border. If Cucumbers and Melons have a nice steady bottom heat, they will not require any further attention than giving plenty of air, watering when necessary, and stopping and thinning out the shoots to prevent them getting overcrowded. After showers, weeds will spring up fast; if hoed over the first fine day, they soon die, but if neglected, they will require more labour to get rid of them.

Fruit trees will now require constant attention. The young shoots of Peaches and Nectarines should be nailed in or tied as they advance in growth. Apples, Pears, and Plums should be gone over frequently, and the shoots thinned or stopped and nailed in when wanted. I must repeat the advice already given respecting the necessity of well thinning all kinds of fruit when it can be done; there cannot possibly be a greater mistake in fruit-growing than to allow any tree to carry too heavy a crop. Besides the injury to the tree, it is much preferable to have a reasonable crop of superior fruit, to an abundant or excessive one of inferior quality. Caterpillars are often very troublesome and destructive on Gooseberry bushes. If attended to in time, they are easily destroyed by dusting over them, with a common tin pepper-box, a little white powdered hellebore. It is rarely necessary to repeat it, so effectually does it clear the bushes of them. Caterpillars are also often troublesome on Pears and Apricots. Being wrapped up in the leaves, it is somewhat difficult to reach them either by dusting or syringing; pinching the shoots with the fingers, and hand-picking them, will, if timely begun and persevered in, clear the trees of them. The Black Aphis, which sometimes attacks Cherry trees and occasionally Peach trees, is rather difficult to destroy; perhaps the easiest way of getting rid of it is to cut or pinch off the ends of the shoots; it may be destroyed by dipping the shoots a few times in tobacco-water, but this is a tedious operation, and where a number of trees are to be gone over, takes up much time. The Green Fly that attacks Red and Black

Currant bushes is easily got rid of; these always attack the ends of the shoots, and their presence is soon indicated by the curling of the leaves; the bushes should then be carefully gone over, and the ends of all the infected shoots should be pinched off. This should be attended to in proper time, for if it be delayed, the fruit will soon get all covered with honey-dew, which spoils its appearance. Vines in greenhouses should have as much artificial heat as it is possible to give them, consistently with the well-being of the regular occupants of these houses, abundance of air being given daily. Bad borders, want of artificial heat, and want of air, are at the top and bottom of all bad Grape-growing.

Stourton. M. SAUL.

THE TOMATO.

THE immense importance of this vegetable in the domestic economy of the middle-class is beginning to be felt. We see in Manchester a regular supply in the market, and good prices are paid. An American clergyman told me that in his parish there was a greater weight of Tomatos brought to market than of any other vegetable, and he could hardly relish our dry dinners, when Tomato sauce* was wanting. He reckoned the Tomato among sauces, to be like the jelly of the stock-pot among soups, taking all forms and flavours according to the ingredients with which it is seasoned. Fortunately, this luxury—the Tomato—is quite within reach of thousands of FLORIST readers, as it may certainly be home-grown without the aid of glass or even of walls. And as to the question of cooking Tomatos, we may safely leave that to the general spread of education, which, like the railroads, will, no doubt, eventually level up, or level down, any little prejudice that there may be against them.

The Tomato plant, or Love Apple, when not in fruit, is particularly uninviting in appearance. Like the potato, it belongs to the *Solanaceæ:* indeed, the stem and foliage have very much the appearance of those of a tall-growing late potato, rising like that to the height of about three feet; but beyond this, its resemblance to the potato ceases, and, indeed, it has very little in common with the Frenchman's "apple of the earth," for in the case of the Tomato, the apple, or fruit, is the only part that is eaten, whereas in the potato the apple, or fruit, must not be eaten. The Tomato is simply a tender annual of the easiest culture, growing freely from seeds, which are to be had cheaply enough at any seed shop; but it frequently happens that the plants ready grown may be purchased like celery plants, in the market, in large towns, and thereby a good deal of trouble in rearing them may be saved. If the seeds are sown in thumb pots in a warm place in April or the beginning of May, they will be fit for their final transplanting about the first week in June.

The Tomato is a plant of rough, coarse growth, and would get sadly out of bounds if it were not confined and stunted; but as it "bears wrongs patiently," it can be checked by want of pot room in the first instance, and afterwards by thinning and stopping its branches. It is fortunate that this plant is a denizen of the kitchen garden, where appliances that would be unsightly in dressed ground can be resorted to, for the Tomato is fond of a south wall, or even a melon frame if it could get it; but it is not to its culture under glass, or against a south wall, that I would now direct attention, but to its bearing Love Apples in anybody's garden.

Land sloping gently to the south, sheltered by surrounding plantations, and having a substantial barrier, such as a stone or brick wall, against the northern blast, and to reflect the sun's rays, would be considered as signs of a sheltered spot suitable for growing tender plants. All these features must be carefully imitated, for it will be evident to every one that a tender plant cannot but suffer from the effects of a cutting wind; and hence experienced nurserymen chequer their grounds with Evergreen hedges to shelter the crops enclosed in the squares or quarters. But of all others, the sailor is the man from whom to learn this science of the wind, for it is his first thought in the morning to ascertain the point from whence the wind blows, and the power it puts forth; and you may see the "ancient mariner" hang a canvas sheet against the wind to shelter the man on the out-look, for in our climate the wind is constantly running away with the heat, and leaving the cold behind. Now, this common-sense practice is all that is required in the open garden to protect the Tomato from the sweep of the wind. Instead of planting it, like cabbage plants, on the level surface of the garden, it has to be grown in pens or pits. The earth will lie with little trouble when made to slope two feet horizontal to one foot perpendicular, and with a very small amount of digging and banking, or, as the navvies have it, "cutting" and "filling," it will be easy enough to get a breastwork sloping to the south, and rather longer than the three-feet stem of the Tomato. On this slope a thin coat of small coal, blue slate, or even limewash, to reflect the heat, and act the part of a wall, should be placed, and the ground should then be chequered with such things as pea-sticks to make dead hedges. Of course wooden walls of stakes two feet high or turf walls will answer, or indeed any barrier that will last for one season; indeed, straw ropes on rough stakes where straw or litter abounds, would require little labour to erect, and still less to clear away when not wanted. The whole thing will look like pens for sheep or pigs at a fair, but the clumsiness of the materials has nothing to do with the principle involved. The rifleman in a rifle pit is safer there, than he would be standing like a gate-post on the level, and he is, moreover, warmer; and the object of the Tomato-grower is to lengthen the summer a little, and to concentrate the fair weather, and turn aside the foul weather. The plants must be tied to sticks, or trained against the boards, as the fruit is heavy. More accurate instructions might be given, were it not that in each locality the ways and means will vary. ALEX. FORSYTH.

THE CAMELLIA AS A SHRUBBERY PLANT.

IT may not be generally known that the Camellia is comparatively as hardy as the common Laurel, and as manageable, since when well established it will bear any amount of cutting back and trimming into shape, while the beautiful dark green colour of the glossy foliage contrasts admirably with the lighter-foliaged plants in the shrubbery. Therefore, I see no reason why it should not be more extensively used for intermixing with other shrubs in the open borders.

It is generally supposed that the localities in which Camellias will flourish are confined to the south and south-westerly parts of the country, but I do not see why a plant so suitable and desirable should be entirely confined to those districts, as it is growing here side by side with Laurels, Hollies, Portugal Laurels, and Rhododendrons, and submitting to any amount of frost with an equal degree of impunity, so that we may reasonably conclude that it is equally hardy. With a little more attention paid to securing a suitable compost to plant them in, Camellias may take a prominent place as shrubbery plants. In sheltered situations, and in favourable seasons, they will produce flowers most profusely; but as this takes place in the early spring, they are liable to have the flowers discoloured by the morning frosts, so that their flowering must, in a general way, only be looked upon as a secondary object where they are planted for the sake of their foliage in the mixed border.

Supposing, however, the production of flowers to be the primary object, it would only be necessary to select a very sheltered situation, and to provide a temporary framework, with a canvass covering to stretch over them at night, as soon as the flowers begin to expand. This would preserve them in great beauty for a long time, and under very favourable conditions as to soil and season the flowers would be as fine as most of those grown under glass. Without protection during the time of inflorescence, such a result cannot be attained in the midland counties; yet, although this might be urged as an objection, it need not militate against their being planted for the sake of their foliage, taking the flowers according to the seasons—sometimes fine without any care or trouble, at others nipped off in the height of beauty in a single night.

For flowering purposes a warm and sheltered southern aspect is best, otherwise no regard need be paid to aspect, as the plants will grow on any—east, west, north, or south; but it is necessary to observe that the situation in which they are planted should be sheltered from boisterous and cutting winds. Mere cold will not hurt them, but when it is accompanied with fierce and driving winds, it is apt to discolor the foliage very much. As a general rule, shady borders are more favourable for the development of the foliage than those which are exposed to the full glare of the sun; and hence they are found to be capital plants for covering a north wall. From such a situation I have gathered, even this season, paler bar running along their centre; this, too, is a beautiful flower. *Duke of Buccleuch*, a pale grayish violet; *Lady Emily Talbot*, blush, with a white bar down the sepals; and *Lord Napier*, pale reddish-tinted purple, also belong to the same batch. A large, pure white forcing *Pink*, named *Alba Multiflora*, received a First-Class Certificate. This was shown by Mr. Wadson, florist, Hammersmith, and promises to be a most valuable acquisition.

Some of the newer double-flowered *Pelargoniums* are just beginning to put in an appearance. There are three varieties so thoroughly distinct and good as to deserve record here, viz., *Marie Lemoine*, rosy-pink, much deeper than Madame Lemoine; *Mons. de St. Jean*, deep carmine, distinct, and very good; and *Wilhelm Pfitzer*, rich glowing scarlet, very showy and bright, and of a dwarf habit.

Mr. Turner's pretty new Hybrid China *Rose, Miss Ingram*, was awarded a First-Class Certificate at the Royal Botanic Society's Show, on the 19th ult. A small plant was exhibited, having three well-developed flowers, the colour blush, with a deep flesh-coloured centre. Perhaps it is open to doubt whether it be judicious to give certificates to forced Roses, but as there are plenty of precedents for adopting such a course, it is too late to raise the question.

Mr. J. Butcher's new grey-edged *Auricula, Mrs. Butcher*, has developed into a first-class flower, and a First-Class Certificate of merit was awarded to it at one of the meetings of the Royal Botanic Society, a few weeks ago. *Alpine Auriculas Constellation* and *Brunette*, both from Mr. Turner, received the same award; both have rich maroon-crimson-coloured grounds, with bright gold paste, and are undeniable additions of merit to Mr. Turner's already fine collection. A dwarf-growing *Wallflower* of great promise, as likely to be useful in the spring flower garden, has just been shown by Messrs. Carter and Co., and is called by them *Yellow Tom Thumb*. The flowers appear to be nicely rounded, like those of Cheiranthus Marshallii, and it blooms freely, and gives a good mass of colour. However, yellow is the colour least wanted in the spring garden. R. D.

MONTHLY CHRONICLE.

MAY meetings have been plentiful in the world of Horticulture. There have been held the usual Great Shows at the Regent's Park and Crystal Palace, the former quite up to, the latter rather below, the average of merit; a Spring Show and a Special Show at Kensington; a National Show at Manchester, which was both comprehensive and excellent; and the Show of the Royal Horticultural Society of Ireland, besides the usual Committee meetings, &c. Mr. Turner's large specimen Roses were the finest features at the Park, and an eloquent rebuke to those who would abolish what are called large specimens and large pots at our great shows. At the Palace the show of Bouquets was the most attractive feature, but rather from its novelty than its excellence. However, the very fact that nothing very original or *recherché* was brought forward, is a sufficient evidence that there is an opening in this direction, and we trust that bouquet exhibitions will be persevered in, with the improvement suggested by a correspondent of the *Gardeners' Chronicle*, namely, that amateurs and *artistes* should compete separately. The main features of the Special Prize Show at Kensington were the groups of Variegated Zonal and Gold and Bronze Pelargoniums, the former showing beautiful colouring, but not much advance in the direction of novelty; the latter showing both high colouring and improvement. At Manchester Mr. Baines's group of fifty miscellaneous flowering and foliage plants, including his wonderful Sarracenias, occupied the place of honour; and in Dublin, according to the report, the pot roses were the greatest triumphs. The Great International Horticultural Exhibition of St. Petersburg opened on the 17th ult., and was continued till the 28th ult. This exhibition was rather limited in the floral department, but was otherwise fairly supported, though the arrangement, from the too profuse introduction of rock-work in imitation of Alpine scenery, is said to have been extremely artificial.

—— For the Winter Decoration of Conservatories few plants are more useful than the Solanum Pseudo-Capsicum, which is thus grown at Bicton:—The old plants are kept over from year to year, and about May are cut back, stripped of the old leaves and berries, and planted out of doors in very rich soil. They are allowed to grow freely till the autumn, when they are again taken up and potted, and placed in the different houses to exhibit their bright, lively berries. They undergo the same treatment in succeeding years, and thus managed, the plants become huge bushes, from 3 ft. to 4 ft. high, and as much through, bearing a peck or more of berries. They are really magnificent decorative plants when grown to this high state of perfection.

—— The Gold and Silver Ferns seem liable to a great amount of variation, and intermediate forms, whether hybrids or sports, are often very distinct and beautiful. Such is the case with some that M. Stelzner, of Ghent, has sent us. The most striking is *G. Laucheana gigantea*, a richly-powdered form of the chrysophylla group, growing to a large size, and having remarkably broad leafy pinnules; this will be found an extremely decorative plant. *G. aurea pendula cristata* has the same free-growing habit as the former, but with a multifid apex to the somewhat narrower fronds, and is of freer growth than most of the crested varieties of Gold Ferns. *G. Stelzneri superba cristata* is another Golden Fern more sparsely powdered, but very distinct and elegant; it has a multifidly-forked apex, the tips of the pinnæ broadly fingered, and the pinnules also broad.

—— In the beautiful Spring Garden at Belvoir, Mr. Ingram adopts a plan of growing Hyacinths, Tulips, &c., by which they may be transferred to the beds without injury, at any stage of growth. They are potted in small 60-pots in November, and are placed in some sheltered position, and covered with light soil; they remain thus covered until they begin to grow—probably until January. They are then removed to cold pits, and treated according to the season, so as to ensure the bulbs blooming in March. Some time in that month they are plunged, without being removed from the pots, into the beds arranged for them. At the end of April or early in May the bulbs are removed from the flower beds, and turned out of pots, and planted in beds of rich soil reserved for them. Treated in this way the bulbs receive no injury, and are fit for use the following year.

—— The new Rose, Madame la Baronne de Rothschild, which was last season considered as "the" Rose of the year, has this season confirmed the opinion previously formed of it, and may be considered the best flower of its colour in cultivation; for, beautiful as are such roses as Marguerite de St. Amand, Monsieur Noman, &c., they must all yield the palm to Madame la Baronne de Rothschild, with its large deep globular flowers, and its clear silvery-pink delicate colour, with perfectly smooth, immensely large, thick petals. The habit is remarkably robust, the foliage ample, and altogether it is one of the most noble and beautiful of all pale perpetual Roses.

—— The best Permanent Shade for plant houses is linseed-oil and sugar-of-lead, in the proportion of about a tea-spoonful of the lead to a quart of oil. The exact tint must be governed by the amount of shade required; therefore it is best to apply the lead gradually, and prove it upon waste glass. The *modus operandi* is this:—First wash the glass thoroughly clean, and then on a dry clear morning put on the oil and paint as thinly as possible over the glass with an ordinary paint brush; then follow with what the painters call a dusting-brush, loose and quite dry, and by dabbing it gently on the oiled portion, a frosted or ground-glass appearance will be given to it. An ordinary garden labourer, with a little practice, will do this very nicely.

—— COLEUSES intended for Winter Decoration should be raised from cuttings put in in July, the plants being potted on as required, and pinched in to give them the desired form. They will be found remarkably effective during the winter months, being excellent for grouping amongst other plants, while their smaller branches come in useful amongst cut flowers at a season when flowers are scarce. Coleus Verschaffeltii, Veitchii, &c., require a rather high stove temperature to keep them in respectable trim during the winter, and this is a drawback; but many of the new hybrids, such as C. Bausei, Marshallii, Berkeleyi, and Saundersii do exceedingly well in a temperature which might be called intermediate, averaging at night between 45° and 50° only.

—— THE Prize of £5 for an essay on the Variegated Zonal Pelargonium, to form a basis for discussion at the meeting of exhibitors and others, held on the day of the Special Pelargonium show at South Kensington, was awarded to Mr. Grieve, of Culford, the author of an excellent treatise on this family of ornamental plants, of which, indeed, he may be designated the founder. Seven essays were sent in, of which a second by Mr. Smith, of the Jersey National School, was considered sufficiently meritorious to be recomended for a second prize of £2.

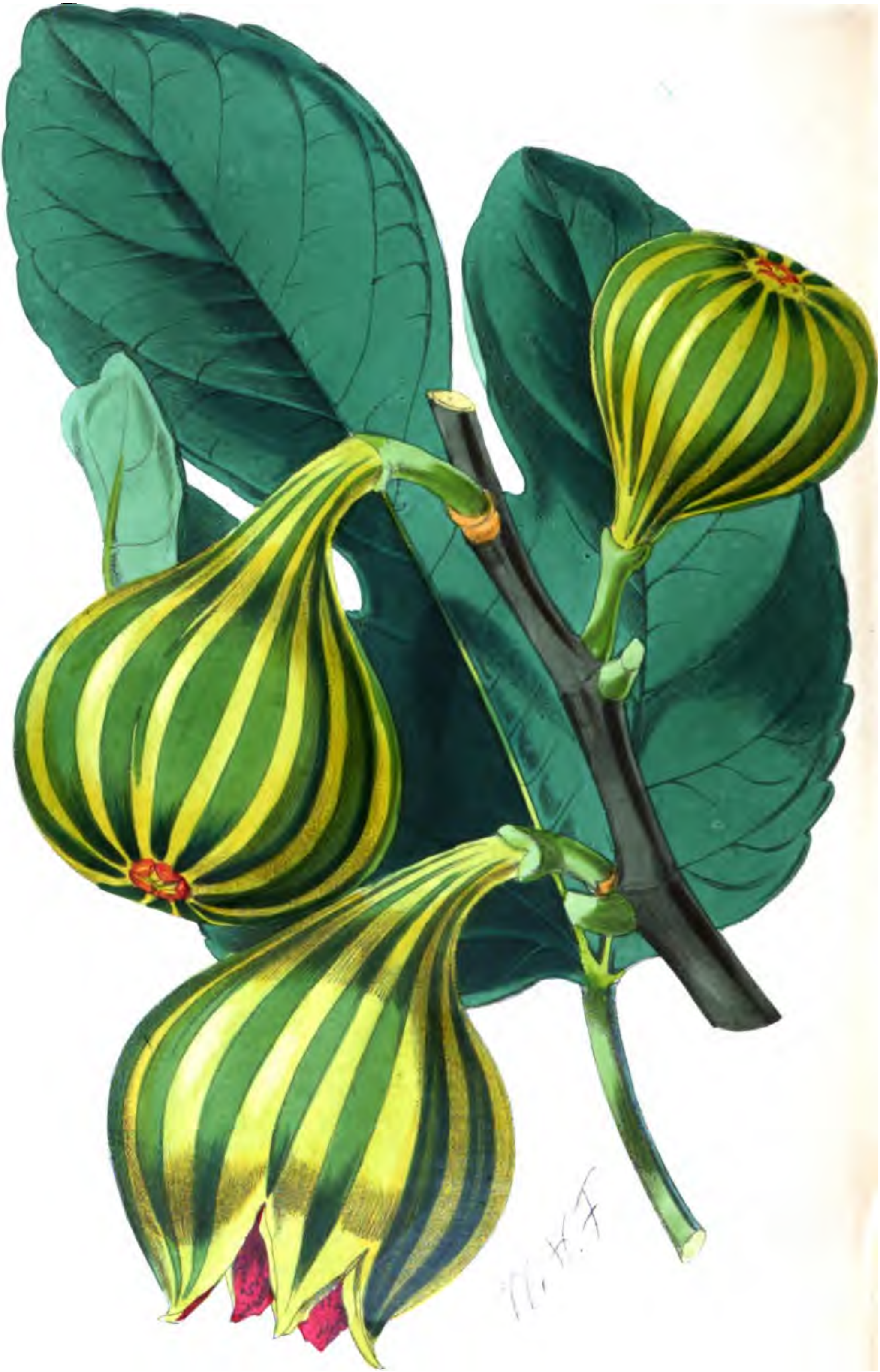
—— AT a recent sitting of the Scientific Committee of the Royal Horticultural Society, Dr. Masters exhibited, on the part of G. C. Oxenden, Esq., some drawings representing a yellow-flowered Orchid found wild in East Kent, and which was said to be Ophrys lutea, but which, far more probably, was a yellow-flowered Bee Orchis, a singular variety, which has hitherto escaped observation.

—— THE semi-double flowers of Henri Capron Pear produced this season at Chiswick have had a very beautiful appearance. On a large pyramid tree fully one-third of the flowers were in this state—one or two branches entirely so. This character has not been noticed before, and attention was directed to it through the dense and beautiful appearance of the blossom. The tree, although in the midst of a plantation of over one hundred varieties all in full bloom, stood boldly out, the most beautiful of them all.

—— THE Sub-tropical plants at Battersea attained great perfection during the last hot summer. The following are the heights of a few of them:—Ferdinanda eminens, 12 ft.; Wigandia caracasana, 8ft.; Polymnia grandis, 6 ft.; Canna peruviana, 11 ft.; Canna Annæi, 12 ft.; Canna maxima, 9 ft.; C. Van Houttei, 9 ft.; Solanum laciniatum, 8 ft.; Ricinus, several varieties, 18 ft.; Musa Ensete, 15 ft. The stem of one plant of Musa Ensete measured 4 ft. 5 in. in circumference at the ground, and 2½ ft. at 3 ft. higher up.

Obituary.

—— SIR CHARLES WENTWORTH DILKE, Bart., died on the 10th ult., of quinsey, followed by erysipelatous inflammation, at St. Petersburg, to which capital he had been invited as one of the representatives of England at the Russian International Horticultural Exhibition. He was born on February 18th, 1810, and was educated at Westminster, and at Trinity Hall, Cambridge. For many years he took a prominent part in the management of the Society of Arts, and that of the Royal Horticultural Society, the resuscitation of the latter being due, in no slight degree, to his exertions. He was a leading member of the Executive Commissions of the Great Exhibitions of 1851 and 1862. He also acted as Chairman of the Committee of the International Horticultural Exhibition held in London in 1866, and in this capacity horticulturists will long remember him for his indomitable energy and administrative skill, qualities which much conduced to the success of that undertaking, with which he retained his connection by accepting the office of Trustee of the Lindley Library established with the surplus funds. Few men who have not been actually engaged in the practice of Horticulture have done more to promote its interests than the late Sir Wentworth Dilke; and his associates in horticultural matters, no less than his personal friends, will preserve an affectionate remembrance of the frank and genial friend, who was ever courteous and sensitive in his consideration for others, and ever ready with his counsel or aid, for those who needed either.



Fitch. imp

Fig

Col di Signora blanca panachée.

itch.

FIG COL DI SIGNORA BLANCA PANACHÉE.

WITH AN ILLUSTRATION.

TO all lovers of beautiful fruits, the accompanying plate of this, the most beautiful of all Figs, will be especially welcome. Our artist, while doing full justice to it, has done no more than faithfully represent it in its true colours, as growing in the extremely fine collection of the Royal Horticultural Society at Chiswick. Nothing can exceed the charming appearance of a handsomely grown pot-tree of this variety, laden with its strikingly handsome figs. The fruits are not all exactly similar to those represented, some being even more streaked (panachée), some more irregular in the markings, some almost yellow, and some reverting to the natural green; all, however, are very beautiful, and show their markings plainly, from the first appearances of the little embryo figs, until their maturation.

This is not a new Fig, but a sport from the better known Col di Signora Blanca, one of the finest Italian varieties, which it closely resembles in form and quality, and, like it, requires to be grown in considerable heat, so as to bring out fully the superior richness of flavour. It succeeds best grown in pots, under which conditions it fruits freely, and proves in every respect satisfactory.

Fruit medium-sized, roundish-turbinate, evenly and regularly formed. Neck shorter than in the original. Skin thick, green, beautifully striped with longitudinal bands of bright yellow. Eye small, closed. Stalk short. Flesh deep rose, thick and syrupy, rich, and most delicious.

The figure is taken from fruits of the second crop, which are produced more freely than those of the first crop. The latter are, in general, larger and longer in the neck; indeed, the length and form of the neck of these first fruits are suggestive of the name, Lady's Neck. B.

STRIPED FRUITS.

ALTHOUGH striping and variegation amongst fruits is not particularly common, yet sufficiently striking examples of it are to be met with in almost every class. Fruits, like flowers, have their natural colours more or less influenced by the condition of the plant, exposure to the sun's action, &c.; but some are decidedly variegated, as in the fig forming the subject of the foregoing article, this variegated tendency permeating the entire system, and being occasionally seen also in the stems and foliage. Plants with variegated foliage, which are becoming more common year after year, do not as a consequence produce variegated fruits, although occasionally they may do so. It may, then, be said that there are two classes of variegation amongst fruits,—the one natural, as in the most of the apples enumerated below; the other sportive, as in the fig, pear, &c. It is, however, so difficult to define them exactly, that I shall not at present attempt to do so.

The following is a list of all the examples of striped fruits which I can at present call to memory :—

FIG.—*Col di Signora Blanca Panachée:* described above.

PEARS.—*Beurré d'Amanlis Panachée:* beautifully marked with broad bands of rosy red and yellow, very striking, and pretty constant; desirable. *Duchesse d'Angoulême Panachée*, or *Duchesse Panachée:* the quiet green of this fruit is prettily set off with broad stripes of deep yellow. *Louise Bonne d'Avranches Panachée:* this is Louise Bonne of Jersey, very prettily striped with broad bands of rosy red and yellow; very handsome. *Virgouleuse:* fruit pale yellow, striped with rosy red. *Culotte de Suisse:* fruit light green, striped with yellow. *Winter Crassane:* fruits pale green, striped with yellow.

APPLES.—*Reinette Rayée:* this is an exceedingly pretty little fruit, very evenly and regularly marked with broad bands of rosy red and yellow. *Reinette à Feuilles d'Aucuba:* fruits striped with yellow, slightly rosy; leaves resembling those of the aucuba. *Hoary Morning:* very beautifully striped with rosy red. *Yorkshire Greening:* this is at times prettily marked, but not constantly so. *Devonshire Red-Streak:* slightly striped. There are besides many apples showing streaks of colour, but they are not sufficiently distinct to be here noticed.

GRAPE.—*Aleppo Chasselas Panaché:* this is a most singular variety, some berries being prettily striped with black and red, or white, some half black, others half white or red, others again wholly black, red, or white; leaves striped with green, red, and yellow; berries round, of medium size; flavour inferior.

APRICOT.—*Abricotier Panaché* (the Striped Apricot): fruits medium-sized, pale orange, shaded on the exposed sides with bands of reddish orange and pale yellow; leaves prettily blotched with yellow.

CURRANT.—*Striped-fruited:* the fruits of this variety are yellow, distinctly striped with red; it is, however, a very shy bearer. *Commune à Feuilles Panachées* has also the fruits slightly striped, and the leaves variegated.

GOOSEBERRIES.—*Striped-fruited:* this is a greenish-yellow sort, the stripes being of a darker yellow; not very distinct.

MELON.—*Queen Anne's Pocket:* the fruits of this are quite of an ornamental character, small, round, and prettily striped with broad bands shading from dark orange to pale yellow. All the other varieties of *Cucumis Melo Dudaim*, to which this variety belongs, are more or less gaily striped. There are, besides, numerous varieties of Gourds, which are wonderfully beautiful in their striping; but these, though botanically coming under the designation of fruits, since they are not practically used as such, are here passed over.

Although fruits are mainly valued for their eatable properties, yet a pretty appearance is not to be despised; and if equal excellency can be obtained under a more beautiful exterior, the combination of the two qualities is certainly to be preferred. Fruits at the dinner-table should be at once a delight to the eye, and a gratification to the palate. Some object to the high and picturesque colouring of many of these striped fruits, and fancy that they have too much of a painted look about them to be good to eat; they prefer to have fruit of a more natural appearance, such as they have been accustomed to,—red fruits to be red, black fruits black, &c. The same objection might, however, be urged against all forms of variegation and fancy colouring, in leaves as well as in fruits. Highly-coloured fruits are not so often met with in this country as in sunny France, the brighter sun of the South enhancing and deepening the intensity of the colours to a greater degree than they are capable of attaining under our leaden skies. Fruits are not, however, all coloured through the same agency, for whilst sunshine is required to produce red, orange, &c., comparative shade will afford a deeper black and a purer white; and with this remark I end my chapter on Striped Fruits, recommending them strongly to the notice of cultivators.

Chiswick. A. F. BARRON.

PIMELEA HENDERSONI.

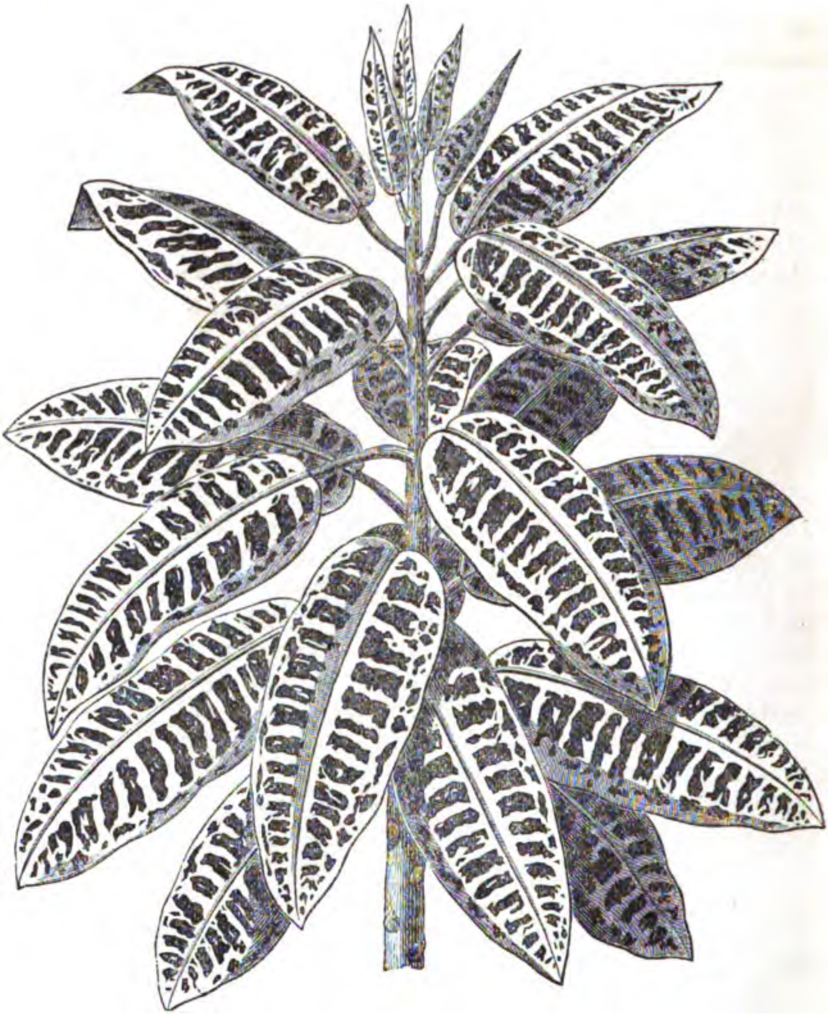
JULY is a convenient time in which to take in hand a young healthy plant of the above-named Pimelea. Such a plant should be kept in the open air, well exposed to the influence of the sun, from the beginning till about the middle of the month, in order to ripen its wood. It should then be cut down, leaving about an inch of the last season's growth for the plant to break from. The soil must be allowed to become moderately dry before cutting over, and the plant should still remain in the open air, merely providing protection against heavy rains, in case it should be required. This point must be strictly attended to, as with hard-wooded plants it is almost certain destruction if the soil becomes waterlogged, and especially so if this should happen when the plant is divested of the greater part of its foliage. In about a fortnight after cutting, if all has gone right, the young growth will begin to push, and by the middle of August the plant will require a shift into a pot a size larger. Let the drainage be ample, and on the top of it place some rough fibry peat to keep it in working order. Use good fibrous peat, broken up into small pieces, add to this about an eighth part of its bulk of yellow loam, and a sufficient quantity of silver sand to cause the water to pass freely through. Pot firmly, and in doing so keep the stem of the plant sufficiently elevated to make a slight fall from it to the pot-rim. Attend well to the operation of watering; when water is given let a sufficient quantity be applied to cause it to pass freely through the whole mass of soil. By the end of September the plant should be removed from the open air to a cool, airy greenhouse, and be placed in such a position that the young growth may be within a foot and a half of the glass, while plenty of air must be admitted on all favourable occasions. In this position the plant should remain until the flower-buds begin to expand, when it should be removed a little farther away. When blooming is over, the plant is to be treated in every way as recommended above. If two or three plants of this Pimelea are grown, they may be made to bloom in succession by pinching out the tops of the shoots, at intervals of a fortnight, from the beginning of February till the middle of March.

Somerley Gardens. HENRY CHILMAN.

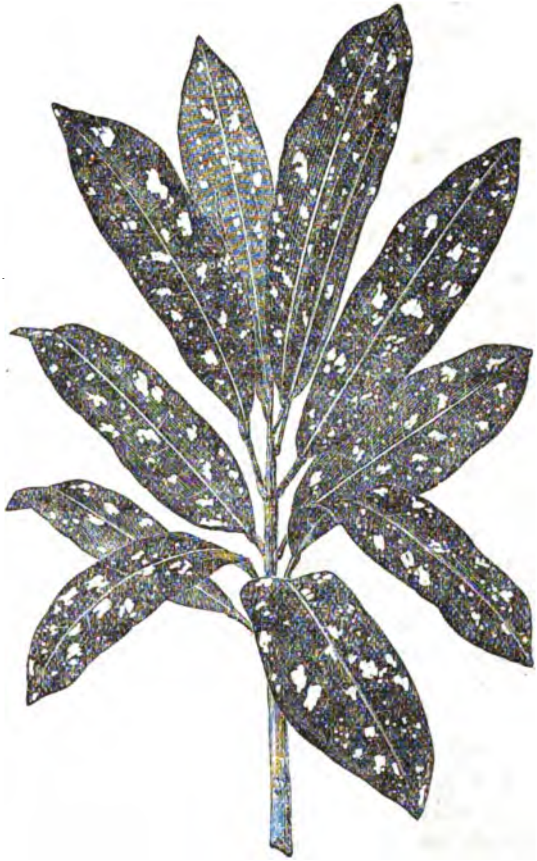
NEW CROTONS.

MOST cultivators of stove plants appreciate the merits of the several variegated Crotons known in gardens as C. variegatum, C. pictum, and C. lineare, as the fine specimens produced and their frequent appearance at exhibitions sufficiently testify. These, however, are quite superseded by some of the many noble varieties of this variable species (more correctly called Codiæum variegatum), which were obtained for our gardens by Mr. John Gould Veitch, during his trip to the South Sea Islands; and of two of which we are enabled, through the courtesy of Messrs. Veitch and Sons, to offer illustrations.

One of the finest of these novelties is **CROTON MAXIMUM**, of which we append a diminished figure. This is one of the largest of the yellow series, producing leaves from 12 in. to 14 in. in length, and 3 in. to 4 in. in breadth, of an oblong-lanceolate figure, acute at the apex, of a rich golden yellow colour, marked on each side of the midrib with dark green transverse bars of irregular form. The plant is of strong robust habit, and admirably suited either for general decoration or for the purpose of exhibition, so that we may expect soon to see it taking a prominent position in our public displays of ornamental plants.



Fully equal, if not superior to this in beauty, is **CROTON VEITCHII**, which has leaves nearly a foot long, and about two inches broad, oblong lanceolate, acute, polished, having the midrib, the main veins, and the reticulations near the edge of a clear creamy yellow, which becomes suffused with deep rosy red, the intervening transverse bars being of a deep green. The colouring of these leaves is very beautiful, and the vigorous habit of the plant, as well as the manner in which it displays its foliage, are such as to place it in the front rank of ornamental-leaved stove plants.



We add a figure of another variety, which, though less strikingly beautiful than the foregoing, is remarkably different from any of these, or indeed from any other forms of the species. This is CROTON AUCUBÆFOLIUM, a plant which is of compact habit, and has oblong acuminate leaves, 6 in. or 7 in. long, and 2 in. to 3 in. wide, dark glossy green, studded with blotches of yellow, sometimes passing into red; hence it bears a strong resemblance, in its markings at least, to the well-known Aucuba japonica.

Of a somewhat different style of marking, but not less beautiful, is **CROTON HOOKERI**, introduced from Erromango. It has oblong lanceolate leaves, somewhat smaller in the examples which have been exhibited than those of the two former, but marked with a broad vandyked centre of very bright clear yellow, the outer margin being green. The strong contrast of colour, and the regularity of the marking, make this a very ornamental plant.

Another distinct form of a strikingly ornamental character is **CROTON WISEMANNIANUM**. This has elongated leaves, of a narrowly lanceolate form, with a yellow variegation, the markings resembling those which occur in the leaves of the commonly grown C. variegatum itself.

These plants have all been certificated at one or other of the meetings or exhibitions of the metropolis, and may be safely recommended to the attention of plant-growers, as very far in advance of the ordinary Crotons, on which so much cultural skill is now often expended. M.

IXIA CROCATA.

THIS charming little flower is so useful during the month of May and in the early part of June, both for decorative purposes in the conservatory, and also as a never-failing source of cut flowers, that it is very much to be recommended, and only requires to be more generally grown to be more fully appreciated.

The culture is exceedingly simple; and as the plant will flourish best without any kind of forcing, it is advisable that the bulbs should not be potted from the dry state too early in the autumn. A nice succession may be kept up by potting a portion of the stock early in September, and the remainder a month or five weeks later. The soil I use is about equal parts of loam, leaf-mould, and peat, with a little sharp silver sand. Four flowering bulbs are enough for a 5-in. pot, and six for a 6-in. pot. The small bulbs which are not likely to flower may be distributed amongst and planted with the flowering bulbs when the plants are to be used for decorative purposes, as they help to produce a dense mass of green foliage; but when grown for cutting purposes this is not necessary, and in that case the surplus small bulbs may be sown rather thickly in seed-pans, and treated entirely with a view to the production of flowering bulbs another season.

In potting, the soil should be used in a moderately moist state, but not wet; good drainage must be provided, and the pot filled firmly, without pressure. The bulbs are then to be placed on the top, and pressed down about an inch with the finger and thumb, and the soil pressed down gently so as to leave it level a little below the margin of the pot. The pots should then be placed in a cold pit, or they may be set on coal ashes, and covered with a moveable frame and lights; I prefer the latter until the approach of severe weather, when they are removed to a cool pit, kept moderately dry, and from which frost is entirely excluded.

After the bulbs have started, water may be applied, but in very moderate quantities through the winter. When, on the approach of spring, growth becomes active, they will require plenty of water; and at that time a portion may with advantage be placed close to the glass on the shelf of a greenhouse, which will accelerate their flowering. The remainder may be left in the pit until they throw up their flower-spikes, and may then be removed to the conservatory as occasion requires. Several other species and varieties of Ixia and Sparaxis are amenable to the same treatment, but I know of none more showy than Ixia crocata, nor one which increases more abundantly, coupled apparently with the great desideratum of a hardy constitution.

Redleaf. JOHN COX.

THE MULBERRY TREE.

THE Black-fruited Mulberry tree (*Morus nigra*) was introduced into this country from Italy about 300 years since; yet, notwithstanding the delicious flavour of the fruit, and its being produced abundantly upon the tree, we seldom see a Mulberry at any of our fruit exhibitions, and rarely find it dished and sent to table as a dessert fruit; I think I may add that I have never seen it marketed like other garden produce. Stranger still, the gardening periodicals do not enter it in their programme. Yet, after all, the Mulberry tree is a plant of no ordinary merit, and seems to have kept itself quite out of the hands of common people, for I do not recollect to have seen a fine fruit-bearing Mulberry tree out of the grounds of the aristocracy.

There is a Mulberry tree, full grown, and in good fruiting order, in the garden of Lord Stanley of Alderley, in Cheshire; and there is another, a fine old cripple, supported on crutches, on the lawn at Syon House, the residence of his Grace the Duke of Northumberland. This latter is a noted tree, and no doubt was one of the earliest planted in England. Lord Stanley's Mulberry tree at Alderley is of the greatest importance to planters, as it proves beyond cavil that this tree will grow and fruit freely in the North, in what may be best known as the Manchester district, for Alderley is only about ten miles from Manchester as the crow flies. There is a fine old Mulberry tree at Ixworth Priory, near Bury St. Edmund's, Suffolk, that bears fruit freely.

The Mulberry tree is not by any means an inviting specimen for the young botanist to practise upon, for its flowers are inconspicuous, and although the fruit be wholesome, the root of the tree is as nearly poisonous as possible, being hot, bitter, and purgative. It belongs to the Urtical alliance, which includes also the Hemp, the Hop, and the Fig,—all useful to man, but almost incomprehensible to the botanist,—for if we closely examine the Fig, for example, it appears to be a compound flower turned outside in, seeking to hide its florets from the light of day and from the prying gaze of man within a pouched pericarp full of seeds and sweet pulp, as if the flowers, such as they are, *sans* petals and almost *sans* everything, had been drowned in this sac of sugar in which we find the seeds to be imbedded.

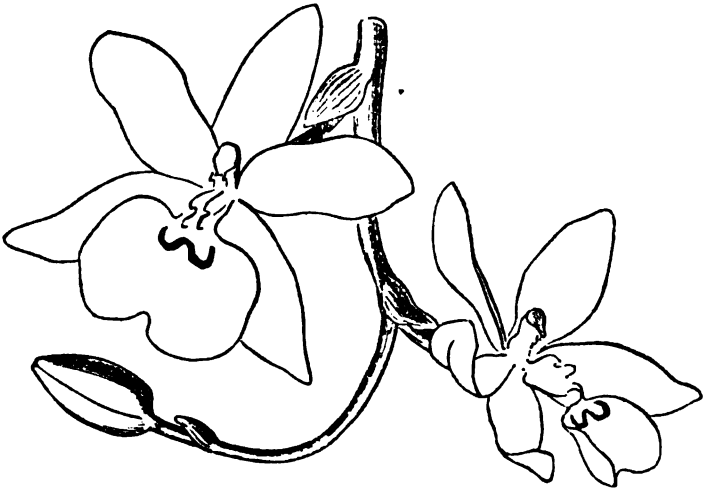
After all, the history of the Fig may help us to know where we may expect success with the Mulberry. There was a fine standard Fig tree, that fruited freely, in the garden at Hedsor Lodge, on the banks of the Thames, near Maidenhead. It certainly was well sheltered by high walls and trees, and the locality had been at one time a richly manured kitchen garden. The Hop gardens, or rather the extensive Hop fields, that so adorn Kent and Hampshire, are quite select portions of the best of our earth and the driest of our climate in England, and it may be necessary in the same way to select the situation suitable to the Mulberry. Even the Nettle, the type of the group, is not a plant to put up with any soil or situation, for it has dogged the footsteps of man, and thrives in the hedge-bank where all is well drained and sheltered, as well as in those spots where the ruined homestead gives by its mouldering decay the best materials and the shelter necessary for a crop.

In the Nursery Catalogues Mulberry plants are quoted cheap enough for any cottager to give them a trial; and when the subject has been ventilated through the pages of the FLORIST AND POMOLOGIST, we shall, I hope, get to know where the tree succeeds, and where it fails. If ever any fruit-bearing tree wanted orchard-house treatment, it is this; for it does not bear fruit when young, and it does not behave well under the pruning knife and the restraint of training, but likes its own way, and then forms a mushroom-shaped standard tree. It requires a sheltered situation, and such a pasture as would not disgrace the Vine will be quite in the way of the Mulberry. You never gather the fruit of the Mulberry as you would gather that of any other tree, but wait patiently till, by the aid of a gentle shake, it falls to the ground. In this way there is no question about ripeness, for the fruits ripen gradually, and yield a daily supply for a long period. This, however, suggests that a clean grass-plat should be maintained under the trees, for the fruit to fall upon.

Salford. ALEX. FORSYTH.

ODONTOGLOSSUM KRAMERI.

THIS is one of the recent Costa Rican introductions, which flowered last season in several collections. In its growth and its pseudo-bulbs it is not unlike Trichopilia suavis; in truth, some plants sold bearing its name at Stevens's have turned out to be that species. When under cultivation, it is easily recognized by its roundish flat pseudo-bulbs, and oblong pale-green leaves, having a smooth, shining surface. The Trichopilia, as it increases in strength, is remarkable for its elliptic leaves, having a surface sensibly rough to the touch. Constitutionally, the present plant is tender, being as impatient of cold draughts as any one of the human species of physical debility. It must be wintered in an intermediate temperature, else the younger growths pine away and die. In moderate heat, it develops its inflorescence very freely, the short flower-spikes proceeding from the young growths, as many as three or four from each pseudobulb, with about an equal complement of flowers to each spike. The flowers, being of thick substance, remain good for a period of three or four weeks. The sepals and petals are of a pale shade of violet-rose, the lip being of same ground, with a double crescent-shaped line of chocolate-purple near the prominent yellow crest. In some forms the flowers are much more attractive than in others, and collectors would do well not only to "take in" the plant, but to see to the variety. Orchid species and varieties have become so numerous, through the importations received from a variety of sources, that the question now is not so much,—Have you got such and such a species? but,—What is your variety? Collection is very desirable, but selection and collection must go hand in hand, in order to make the contents of the orchidophilist's greenhouses and stoves eventually valuable.



Meadow Bank. J. ANDERSON.

POLYMNIA GRANDIS.

THIS truly is a noble plant. It is, in fact, one of the most beautiful and effective of all those which have been used for what is called sub-tropical gardening, and should be introduced to their collections by all who have a taste for this remarkable and effective style of gardening. The plant grows erect, with a stoutish grooved stem, which is furnished with luxuriant and most gracefully drooping foliage. These leaves grow in opposite pairs, on stalks of moderate length, and are broadly ovate in outline, boldly divided in a bipinnatifid manner, with their apices and those of their lobes sharp pointed.

Grown as a single specimen in a sheltered position, and in good, rich soil, this Polymnia speedily develops itself into a noble object. Those who may have visited the Royal Horticultural Society's Garden at Chiswick during the past summer could not fail to have noticed a splendid specimen of it in the collection of summer foliage plants grown there, and magnificent groups of it are to be seen annually in Battersea Park.

If taken up in the autumn and kept through the winter in a stove, the plants will early in the following spring produce a plentiful supply of cuttings. These strike root freely if placed on a slight bottom heat, and, being afterwards grown and established under glass, may be planted out as vigorous young plants in the various positions they may be intended to occupy, when all danger from frost is over.

Polymnia grandis is second to no other plant for its dignified and yet refined aspect in the garden. As in most similar subjects, young plants, if well established before they are planted out, make by far the most handsome plants.

F. W. B.

DOMESTIC AIDS TO GARDEN CULTURE.

IT must be borne in mind that the earth is our only outlet for impurity. We cannot get rid of it in any other way. Diffused through the air, or dissolved in water, it speedily returns to us again. Its place and form may be altered, but scarcely its quality; its poisonous power refuses to be thus destroyed. Now, the earth does not simply hold, it likewise purifies sewage, and changes the poisonous dead matter into health-sustaining, living substance. Not only is the earth the grand deodorizer that never fails, but it is the magical evolver of life out of death. It teems with life; it purifies, utilizes, and glorifies death. It converts dead sewage into wholesome food, or weaves it up into the warp and woof of lovely flowers.

The earth and plants together, become the scavengers and purifiers of the world. No other agents can unloose the firm grasp the earth holds over its dead, nor collect the elements of life from the charnel-house of death. Plants are the true resurrectionists. They open and rifle Nature's wide grave of dead matter, and come forth clothed with the beauty and purity of a new life. To keep the world clean is one of their most important missions. They stand, as it were, midway between life and death, and mediate between the two. Animal life pollutes, vegetable life purifies, the world. Our poison becomes their bread; our waste is their gain. The whole kingdom of vegetables is arrayed on the side of health and cleanliness. Plants crowd around us on all sides, offering us their help as removers of impurities. They are hungry, and are not at all dainty; they can eat any amount of dirt; they slowly consume the largest lumps of solid impurities. They are also thirsty, and will lap up in the greediest manner the whole of our sewage; they try to reach it from afar, but as they are not endowed with locomotive powers, we must simply place it within their reach, and it is astonishing how soon they will give a good account of it, and convert it into grass, beef, milk, bread, fruits, or flowers at our pleasure. Talk about the changes effected by man! what are they compared to the transformations brought about by the combined energies of plants, and the earth? Look at that sewage that you are now wasting in that dirty ditch. Stop it instantly; store it up, and apply it to your soil. In the spring it will expand into a snowdrop, or a crocus, or a primrose, or an auricula, or a daisy. During the summer it will grow into a lily, condense into a violet, cup into a rose, be changed into a bright-zoned pelargonium, run up into a hollyhock, creep into a fiery blaze of verbena, twist into a convolvulus, or melt in one's mouth as a luscious fruit. Or you may admire it in your pot plants as it droops into a fuchsia, flames out into an azalea, is painted on your fine-foliage plants, or curves gracefully into a fern leaf.

Now is the time to elect what your sewage is to become. Provided only you get it into a living plant, it is not at all particular as to the medium employed; and I can add, from a lengthened experience of its use, that every garden plant, with the exception of the heath, seems grateful for its assistance.

The storage and preservation of sewage must, however, precede its application. For this purpose, a perfectly water-tight vessel or tank must be provided. It should also be as nearly as possible air-tight, to prevent the escape of the gaseous constituents. In small cottages, an old oil barrel, sunk into the ground and carefully covered, would answer very well. But for general use, nothing answers so well as a carefully cemented brick and cement well or tank, of a capacity of from 200 to 1,000 gallons, according to the size of the establishment. The size of the tank would depend upon various considerations; whether, for instance, all dish-washings were sent to the tank, or utilized by pigs or other animals, and what proportion of excrementitious matter was conveyed to it, or otherwise disposed of.

Presuming that it receives the whole waste of the family, the tank ought to be large enough to contain a fortnight's or a month's sewage. If conveyed from the house by pipes, these must be carefully tapped; and when the closets are connected with the sewage, a cesspool must intervene between them and the sewage tank. The more solid refuse would thus be intercepted, and the sewage be preserved in a state of sufficient fluidity to pass readily through a pump. For every house beyond the merest cottage, a pump is the cleanliest and, in the end, the cheapest contrivance for lifting sewage. And the best mode for cottages would be for several to combine and raise their sewage by pump-power. Or rather, the whole matter should devolve upon the landlords, who should provide storage for sewage, and means of distributing it, as they now make provision for a supply of pure water.

While the sewage is in tank, means should be adopted to render it as inoffensive as possible. One of the cheapest and best deodorizers is gypsum, or sulphate of lime. This lays hold of the volatile ammonia (the most offensive ingredient), and changes it into a fixed salt. The gypsum effects a double decomposition; it changes the sulphate into a carbonate of lime, and the carbonate into a sulphate of ammonia. Now, this sulphate, although soluble in water, cannot be distributed in the air; consequently, the disagreeable smell is prevented, and the manure continues as valuable, or more so, than ever. The gypsum must be pounded fine and sprinkled among the sewage at the rate of from 6lb. to 10lb. to the ton. An excess of gypsum does no harm, and only adds to the value of the sewage. Bleaching powder, sulphuric acid, and many other substances are used for disinfecting sewage, and it matters little which is adopted, provided it is cheap, and simple in its application. But notwithstanding all that has been said and written upon disinfectants, I have not used any for years.

By using sewage early in the morning or late in the evening, it is astonishing how soon the bad odour vanishes. The roots and leaves together speedily devour it, and after an hour or two no smell of sewage is perceptible. Our two tanks are constantly in use all the year round, and are kept at the lowest ebb throughout the summer. Here sewage is in use every day in the year. Plants in pots growing rapidly or flowering profusely, such as pelargoniums, fuchsias, camellias, &c., receive it every day; others, such as azaleas and caladiums, every other day; roses in pots, vines, &c., are never watered with clean water. Out of doors, the whole flower garden is sewaged, and I have not yet met with any bedding plan that objects to it; whereas most of them seem to enjoy it amazingly, and lick up with a relish. For vegetable culture it is my best help. Being rather short of solid, I fall back heavily on liquid manure, and nothing can excel sewage as a producer of sweet, succulent, tender vegetables. Small fruits, such as strawberries, gooseberries, currants, and raspberries, become large beneath its forcing influence. And apples on the paradise, pears on the quince, peaches, and apricots heavily laden on walls, have all been treated with sewage with decided benefit. For its distribution we use hand-carts, and a horse-cart, and common water-pots. Our tanks are furnished with pumps.

The question has often been asked,—What do you do with your sewage in winter? Pour it on to any vacant ground, or soak manure heaps, ashes, and other rubbish; in one word, it is used thus directly to enrich the ground, or to make or increase the value of our solid manure. During summer it is all at once applied to growing plants, and one of the chief merits of sewage is that it can be utilized at once. Plants can only absorb food in a fluid or gaseous state. Neither roots nor leaves can directly consume solids. All solids must be converted into either water or air, before they can enter into or become part of a living plant. Now, sewage is simply water, foul, it is true, but fouled with the quintessence of manure. It holds animal, vegetable, and mineral manures in suspension. The solids are solved or broken down by water, and thus prepared to become invaluable food for the plants.

Neither is the water that conveys the manure useless; very far from it. The extra water conveyed to plants by the use of sewage may be almost as valuable as a covering of manure to green crops. In fact, it is not at all certain that it does not become a manure. Plants seem to have the power of decomposing water, and absorbing into themselves the gases of which it is composed. Thus what was water to-day may be a sweet cauliflower or juicy green peas to-morrow. More than this, as has already been indicated, water is nature's great solvent, the grand mediator between solids and gases. Water is the wide drinking cistern of vegetable life. Empty it, and that life withers and dies. Keep it scantily supplied, and that life languishes and droops. Fill it liberally, and that life leaps up in gladness, and enrobes itself in its most verdant dress, in token of its gratitude.

Man necessarily uses much of the water of the world. He takes it clean, and it becomes foul upon his hands. Common sense might have taught him not to return this dirty water to the general supply of clean. By such a process the whole stock of water would be polluted. To this, then, it must not return. The air also refuses to take it away, unless at the terrible risk of ruining our health. It gives us due notice through our senses of the danger we incur by converting it into a common sewer for the removal of our pollutions. In this dilemma we turn from the water and the air, to the earth, with its covering of plants. These together are ready not only to take all the water we have fouled, but to return most of it to us again clean. Like finely-meshed sieves, they permit the pure water to pass through, and hold back within themselves every foreign substance that rendered it foul. More than this, they change these pollutions themselves, as we have already seen, into substances of the highest utility, sweetness, and beauty.

In this way, the noxious, impure offscourings of our houses become a clear gain to our gardens, and plants are enabled to fulfil their high and holy mission of preserving the world clean for our use and enjoyment. This Domestic Aid to Garden Culture is within the reach of all, and its universal acceptance could only increase the health, comfort, and happiness of our homes.

Hardwicke House. D. T. Fish.

ROSES: MARÉCHAL NIEL ON GLOIRE DE DIJON.

THE time for budding Roses will shortly arrive, and many will be looking around them for suitable stocks upon which to bud, and thus to increase the number of some especial favourites. I need, therefore, make no excuse for offering a few remarks upon the merits of Gloire de Dijon as a stock upon which to bud that most lovely of all roses, Maréchal Niel.

Two years ago, as well as last year, I placed some buds of the Maréchal into about the middle and more matured part of some grossly grown shoots of Gloire de Dijon. The buds having taken, I reduced the young shoots upon the stock, in each following spring, down to the buds which had formed prominently, as a preliminary to making a strong "start;" and the result, as to progress afterwards made, both in regard to the growth and the profusion of bloom, has surpassed anything I could have wished for. The buds grew so as literally to exceed the stock in size, and the base of each bud has so enlarged as to overlap the wood upon which it was inserted. The young shoots made thereon last season exceeded in some instances 10 ft. or 12 ft. in length.

One thing I have particularly noticed in connection with the Gloire de Dijon as a stock, which is, that if an *old* branch, or branchlet, be worked, and afterwards cut in to the bud as is customary, the bud of the Maréchal so placed seems to lose its capability of growing large, and produces wonderfully shortened growth in regard to its branches, while it yields blossoms much more profusely. I therefore advise all who have a large plant of the Gloire, to try its effects, either way, upon Maréchal Niel. I have not yet tried the former as a stock treated in the ordinary way, but hope to do so in the ensuing autumn, as I have a small supply of cuttings well rooted, in preparation, upon which I intend to experiment.

Digswell. WILLIAM EARLEY.

ONE VINE TO A HOUSE.

LOOKING back to a former page of the FLORIST, I chanced to observe the question, "Shall we Plant One Vine to a House?" Now, although much has been said for and against the extension system, it occurred to me that some good might result if those who had practised the system would give us, not only their opinion thereupon, but also some information as to the extent to which they had carried it out, and the advantages and disadvantages which had been noted during the whole time the plan had been under trial. This information might enable others to judge for themselves as to the propriety of adopting it. I should imagine that some, if not all, of those who have been discussing the subject from the commencement, have had ample experience to enable them to state the facts so clearly, that those of us who are only in a small way may not be led astray, or be induced without good grounds to turn out of the good old paths. From the commencement of the discussion I have turned my attention to the subject; and, with permission, I will state in my simple way what I have done.

The Vine upon which I have been working was planted some years ago, and is trained along the top or ridge of two span-roofed pits, or small houses, one used as a stove-house, the other as a greenhouse. It was planted without any preparation, except, perhaps, a bushel of soil to start it in, all the top soil being taken away, and nothing left but rock, fossils, and sand. Its extraordinary progress has frequently been laid before the public, and has no doubt been noted by many readers of the FLORIST. After the last account appeared, some evil befell it, so that the eyes did not break as I could wish, and I cut it back to the starting-point. It grew rapidly that year, and at pruning-time I left 30 ft.

This shoot was allowed to bear 50 bunches, and to grow 23 ft. more, which, together with the former growth, was only allowed to bear the same number (50) of bunches, and to form 5 ft. only of ripened wood, as it appeared to be somewhat weakened. This was last year, and that wood has only produced two bunches of grapes this season.

The wood for the present season has already attained the length of 11 ft. (with about 14 ft. of laterals, which are allowed to grow wild), and is growing at the rate of 2 in. per day. I have only left 34 bunches on the whole length for this year. Those at the warm end are black and nearly ripe; while those in the cool house are only about the size of small sweet peas, but looking well. The largest leaves on this year's leader measure but 1 foot each way; I have had them measure 18 in.

I ought to add that these pits were never intended for vines, only for plants, so that the vine has to submit to whatever treatment is necessary for the plants. The leader has now returned through the cool house or pit, and is about half-way through the warm one, the end of which I have no doubt it will reach this summer. Being quite satisfied about ripening a late and early crop in two houses from the same vine, I intend, should I be spared another year, to try what will be the effect of exciting both ends of the vine in the warm end, and leaving the middle, about 50 ft. of stem, without any excitement beyond what is necessary to preserve the greenhouse plants. Should the experiment result in anything useful, it may afford materials for a future communication.

JASPER STANDSTILL.

SEASONABLE HINTS FOR AMATEURS.—JULY.

AS a well-kept garden is a constant delight, I would strongly advise amateurs to pay particular attention to proper keeping at all seasons, and particularly now that everything is advancing rapidly to perfection. There cannot be a greater mistake than to attempt to do too much, and then doing it indifferently, leaving the place always in an untidy state. It is much better to do little, but do it well, and thus to keep the place always neat. One of the many recommendations of gardening is the facility with which every one can accommodate his gardening to his means, and excel so far as he goes.

Roses will now be objects of great attraction, and should have much attention paid to them. Those who provided stocks last winter, may now begin budding as soon as the bark rises freely from the wood. In general, bedded-out plants do not require much watering after this; but much attention should be paid to the regulating, training, and pegging-down of the shoots as they advance in growth. Hollyhocks, Dahlias, Salvias, Pentstemons, tall-growing perennials, and other plants should be staked, and neatly tied up, as they advance in growth. Pipings of Pinks should now be put in; and Carnations and Picotees may be layered as soon as the shoots are long enough. Bulbous roots should be dried off, and stored away. This is a good time to clip Box edgings, as also Privet, Yew, and Thorn hedges.

Hard-wooded plants in-doors should, in fine weather, have all the air it is possible to give them, both night and day. They should have a good syringing occasionally of an evening. Young plants in pits and frames will need constant attention; those that need a larger pot should be at once shifted; the plants should be occasionally turned round, and the shoots should be stopped, trained, and tied out as they require it. Plants in the open air must also be well attended to. Cinerarias for autumn and winter flowering should now have their final shift. Chinese Primroses for winter flowering should also be shifted into the pots they are to flower in. Pelargoniums for autumn flowering must be well attended to, and any that require a shift should have it at once; as a rule, they should not be shifted much later than the beginning of the month, for they flower better when rather stinted at the root. With much pot room at this season they run too much into growth, and as a consequence do not yield a perfect head of bloom.

Notwithstanding the long continuance we have had of cold easterly winds, vegetables of all kinds are looking remarkably well and promising. If not done already, as recommended last month, good breadths of Broccoli, Brussels Sprouts, Savoy, and Borecole should be planted at once. Good breadths of the true Walcheren Cauliflower should be planted at the beginning, then about the middle, and again towards the end of the month; these will furnish a good and regular supply of heads through the autumn up to Christmas, if the weather be tolerably open and mild. The main crop of Celery should be planted about the middle of the month; should the weather be dry at the time, the plants must be well watered,—as also must all other newly-planted crops. Lettuce and Endive should be planted for succession, and a sowing should also be made of each. A good breadth of Turnips should be sown for autumn use. Cabbages for next spring should be sown about the middle of the month, not later. The hoe should be kept continually going between all growing crops. As soon as a crop is past, the ground should be cleared, and having some manure put on it, should be dug over, and again cropped.

The directions given last month about fruit-tree management should still be attended to. As Cherries and Strawberries ripen, they must be protected from birds. The young shoots of Raspberries should be well thinned out, leaving only sufficient of the strongest for bearing next year. Fresh plantations of Strawberries should be made with the first runners that can be had; with proper care and attention these will bear nice crops next year. If the weather be dry, good soakings of water occasionally, will greatly benefit the strawberry plantations which are now in bearing.

Stourton. M. SAUL.

PROTECTING YOUNG CONIFERÆ.

IN his important communication, at p. 130 of the FLORIST and POMOLOGIST, Mr. Barnes shows the great advantage of protecting choice young specimen trees of all kinds, even in the fine climate of Bicton. If due attention had been paid to the protection of the young trees of some of the newer and choicer varieties of Coniferous plants, when they were first introduced from Mexico, California, and other countries, many fine specimens would have survived, and have now graced the parks of our nobility and gentry. The opportunity has been lost by a great many planters. The late Earls of Grenville and of Shannon had, however, the foresight and knowledge to act differently, and have left to their successors a handsome legacy in the fine specimen trees now to be seen in their grounds. When I was lately at Dropmore, my friend, Mr. Frost, on showing me the large and fine specimens of coniferous trees growing there, pointed out the great care which the late Lord and Lady Grenville took when they first planted out the trees, both as regarded protection and soil. Many of the half-hardy Mexican Pines would have flourished if suitable sites, under the shelter of other trees in plantations, had been selected for them, and where the severe winters of the last thirty years would have not injured them very much.

In the spring of 1837, I found here a few young Deodar Cedars growing in pots in one of the greenhouses. Two of them were selected to be planted out in a Spruce plantation, and were sheltered with branches until of some size. They are now fine trees above 30 ft. in height, while all the others planted in open and exposed situations have succumbed to severe winters. The seeds from which these Deodars were raised, were sent from the Himalayas by Lord William Bentinck while Governor-General of India, and were amongst the first sent to England. Some other Pines of rather tender habit were planted in the same plantation, and are now fine trees, especially Pinus excelsa and Abies Smithiana.

We often see the Wellingtonia gigantea planted in windy and exposed situations, where the foliage gets browned, and where, consequently, fine specimens are out of the question. The severest of our frosts will not injure this tree, but it requires shelter from the wind, being a native of the valleys of the Sierra Nevada.

Perhaps one of the greatest evils in connection with the death or the slow growth of the newer Coniferæ, was the keeping them too long in pots before they were planted out. The roots got so matted in the pots, that unless care was taken to spread them out, they never got sufficient hold of the ground to prevent the wind from blowing the trees over, while sometimes strangulation occurred from the roots being confined so closely together.

Welbeck. WILLIAM TILLERY.

THE FRUIT CROPS IN YORKSHIRE.

FRUIT crops in Yorkshire are, this season, much better than they were expected to be. All kinds of fruit were last year most abundant, and notwithstanding the heat and drought, much of the fruit was fine. In general, old trees of Apples, Pears, Plums, and Cherries in orchards do not bear good crops of fruit two years consecutively: it is one year an abundance. and the following year a deficiency. These fruits were last year most abundant, and consequently a deficient crop was looked for this year; but it is not so. No doubt this may be attributed to the hot and dry weather being favourable to the maturation of the wood, and the formation of flower-buds. On light soils fruit trees suffered much last summer, and in such places some crops are consequently light; but on strong land, where the trees stood the drought uninjured, the crops are better than could have been expected, after the very heavy produce of last year.

Apricots are an irregular crop: in some places good, in others moderate. Here even on the same wall the crop is irregular; on some trees the fruit is thin. others have a fair sprinkling, and on a few there were three times too many fruit for a crop. I think Apricots will not be much below an average crop.

Peaches and Nectarines are a good crop on strong soils where the trees stood the drought, but on light soils they are deficient. Here the crop is very good. The trees were protected at night whilst in flower. In some places, where there was no protection given, the crop is equally good. There was a deal of bloom even on trees that suffered last year from the drought, but being weak and imperfect on these, it fell off without setting.

Pears are a very good crop, both on walls and in the open ground. Here the crop is very fine; extraordinarily good on some of the standards.

Plums showed an abundance of blossom, but I think the crop will be thin,—last year it was a very heavy one. The weather, whilst the trees were in flower this season, was much more favourable for setting than it was last year, so that the light crop can be accounted for only through the flowers being weak and imperfect. Here there are a considerable number of trees, and there will be a good sprinkling of fruit; but the crop altogether is light.

Apples are a much better crop everywhere than was expected, as the crop last year was very heavy. On old trees that bore heavily last year there is very little fruit this, but on all vigorous trees that were not then overcropped there is now a fair crop. Here there is a fair crop of fruit on all the young trees, while a few of the old ones that were heavily laden last year have little or no fruit. Should the summer be fine, I have no doubt the fruit will be good.

Cherries are a most abundant crop everywhere.

Gooseberries are in most places a thin crop. The sorts that came early into flower suffered a good deal from the cold boisterous weather that prevailed throughout March, but the later sorts are better furnished. Here there is a fair crop of the Whitesmith and some other sorts, but the Ashton Reds and others that came out early are thin. Currants are very abundant, and so are Raspberries, though the canes suffered very much in dry light soils last summer.

Strawberries will be a much better crop than was expected, for the plants in light soils suffered very much last summer. Here some sorts look remarkably fine, and are full of good large bold flowers.

From the foregoing particulars, it will be seen that Apricots, Plums, Gooseberries, and, in light soils, Strawberries, will be below an average crop; and that Peaches, Nectarines, Pears, Cherries, Apples—except on old trees, Currants, Raspberries, and Strawberries on strong land, will be fair average crops.

Stourton. M. Saul.

PRESERVING APPLES, PEARS, ETC.

NEXT in importance to growing our Hardy Fruits, may be ranked the preservation of them for winter use, whether by amateurs or professional gardeners. In the month of February last, a few prizes offered at one of the Tuesday meetings at South Kensington brought together a considerable quantity of Apples and Pears from various exhibitors; and this fruit was in so excellent a state of preservation, that the mode of keeping in the different cases was inquired into. The following is a *précis*, published by the Royal Horticultural Society, of the communications received.

1. As the flavour of fruit is so easily affected by heterogeneous odours, it is highly desirable that the Apple and Pear-rooms should be distinct.

2. The walls and the floor should be annually washed with a solution of quicklime, to which common salt is sometimes added. [Salt is objectionable.]

3. The room should be perfectly dry, kept at as uniform a temperature as practicable, and be well ventilated; but there should not be a thorough draft.

4. The utmost care should be taken in gathering the fruit, which should be handled as little as possible.

5. For present use the fruit should be well ripened; but if for long keeping, it is better, especially with Pears, that it should not have arrived at complete maturity. This point, however, requires considerable judgment.

6. No imperfect fruit should be stored with that which is sound, and every more or less decayed specimen should be immediately removed.

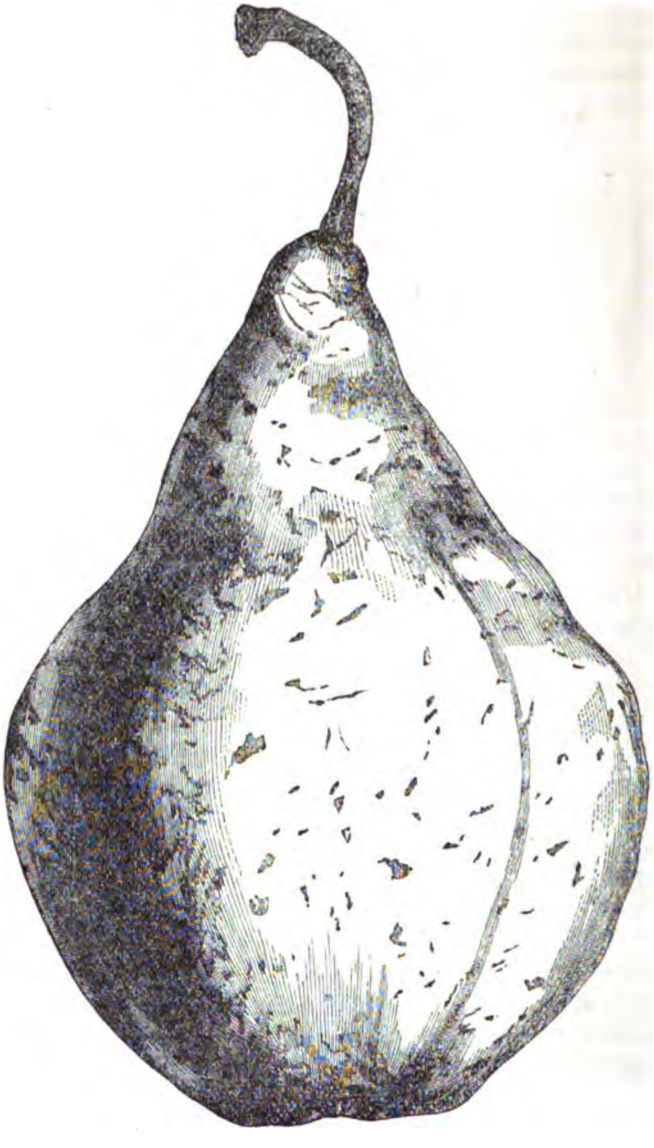
7. If placed on shelves, the fruit should not lie more than two deep, and no straw should be used.

8. Where especially clear and beautiful specimens are wanted, they may be packed carefully in *dry* bran, or in layers of *perfectly dry* cotton-wool, either in closed boxes, or in large garden pots. Scentless saw-dust will answer the same purpose, but pine saw-dust is apt to communicate an unpleasant taste.

9. With care early apples may be kept till Christmas, while many kinds may be preserved in perfection to a second year.

BEURRÉ DU CERCLE PEAR.

THIS excellent new Pear fruited for the first time last year in the garden of the Royal Horticultural Society at Chiswick. It was introduced from the "Société Impériale et Centrale d'Horticulture" of France, and promises to become a variety of standard reputation in this country. The fruit is large, obovate, tapering irregularly towards the stalk; surface irregular, bulging out in



places. Skin smooth, of a beautiful pea-green colour, with a slight patch of russet round the stalk. Eye small, open, set in a very shallow angular basin, almost level with the surface. Stalk long and slender, inserted a little on one side without depression. Flesh greenish white, delicate, buttery, and melting, very solid, with scarcely any core. Flavour rich and pleasant.

This is a Pear which we anticipate will take a high rank. In appearance it is somewhat like a Glou Morceau, but is distinguished by the very long slender stalk and the deep green skin. The flesh resembles that of the Marie Louise and Glou Morceau. Ripe in October. Grafts of this variety were received by the Society in 1860 from the Société Impériale et Centrale d'Horticulture du Département de la Seine Inférieure. H.

FOSTER'S BOILER.

We borrow from the *Gardeners' Chronicle* the following illustrations of a new Hothouse Boiler, which has been introduced with very satisfactory results, by Mr. Pearson, of Chilwell. It will be seen that this is a modification of the good old saddle-boiler, with certain additions, which appear calculated to make it more effective. Its construction will be understood from the subjoined figures and description :—

> When a young man, I was always anxious to see the process of manufacture as carried on in large establishments. In looking over the great Butterley Ironworks, near Derby, I remember having been struck with the first reverberatory furnace I came to. Though I knew chemists considered the flame the hottest part of a fire, and was not ignorant of the effects of the blowpipe, I was still surprised to see the flame alone employed in melting iron. This was a lesson I never forgot. Having 21 houses, some of them 100 feet long, and 24 to 30 feet wide, I have had a good deal of experience in heating; and have nine different kinds of boilers in use, but I have never been satisfied with any of them, for it has always appeared as if the makers had ignored the power of flame by allowing it to strike against a brick wall.
>
> Of all the boilers invented, I think the tubular ones are the worst and the most unphilosophical. No doubt the tubes in a locomotive boiler suggested the idea; but because fire carried through tubes surrounded by water is found to heat water quickly, it does not at all follow that water contained in tubes which enclose a fire should be rapidly made hot. A boiler on this plan can be made of any size, and will hold any amount of fuel, and this I conceive is its only advantage. A tubular boiler must be surrounded by brickwork, and were it fed with small coal and slack, would be choked; it is, therefore, necessary in practice to use large coke, a most expensive fuel; it requires a very deep hole to stand in; the flame must pass by and between but few of the tubes into the flue, so that the heat will be in a great degree wasted; then each tube being caulked into a ring of metal at each end, the large number of joints acted upon by the fire is sure to give rise to leakage, or, if not, the unequal expansion of the metal is likely to crack it. To put hard water into a hot-water apparatus at all is very bad policy, but it must quickly destroy a tubular boiler. The water-way is so small that any incrustation must soon fill it up, and it will in that case soon burn or crack.
>
> A serious objection, common to nearly all boilers, is that they are necessarily surrounded by brickwork, which must become red hot, and the return pipes must pass through this before entering the boiler, so that unless special precautions are taken to prevent it, return currents will be set up, and the circulation impeded.
>
> These objections do not apply to some of the improved wrought-iron boilers, but wrought-iron boilers rust so rapidly, particularly when not at work, that this circumstance alone is a very grave objection to their use.
>
> Impressed with these ideas, I have for years been trying to induce Mr. Foster, who builds my houses, to make me a boiler, and at last I have got into work one which quite equals my expectations; in fact, I have seen nothing like it for quickly heating a large body of water. The boiler is 3 ft. 9 in. in length, and as the fire never comes in contact with anything but

iron backed by water, and traverses it three times from end to end, it must be most powerful. Fig. 1 is a front view; the lower door indicating the ashpit, the middle one the furnace, and the upper being provided for facilitating the clearing-out of the soot. Fig. 2 shows the side, and also the back, against which the flame strikes in the first instance, returning through the two holes seen in fig. 1, and then passing under the arched dome to the back, and so into the flue or chimney. This figure also shows the flow pipe at the top, and two returns at the back, with three of the six bent connections uniting the different sections. Fig. 3 shows the four sections of which the boiler is composed.

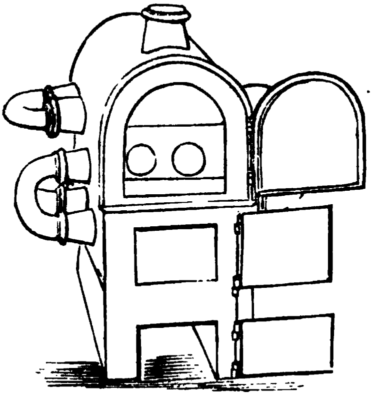


FIG. 1.

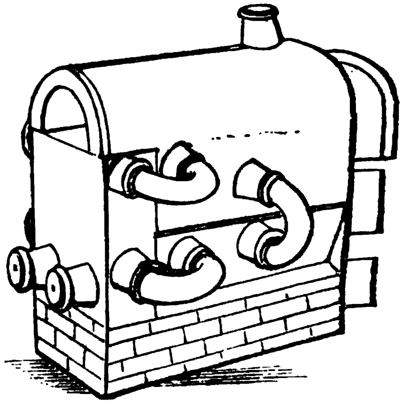


FIG. 2.

Supposing such a boiler to be badly used—slated up with lime water, for instance, and in time injured,—being made in four sections, the sides next the fire bars, which would be the parts sure to suffer, could be replaced at a small cost. No bricks are required above the fire bars; and even if it be convenient to surround it with bricks, such bricks would only become warm, not hot. Every joint, being outside the boiler, is safe from the action of fire. The only objection at present is, that having only 800 ft. of 4-in. pipe to work, it is too powerful. It is fed with slack and cobbles mixed, costing about 6s. a ton, and yet the ashpit door has almost always to be closed, and generally a heap of ashes is put against it to stop the draught. I believe if all my boilers were on the same plan, I should save half my coal bill.

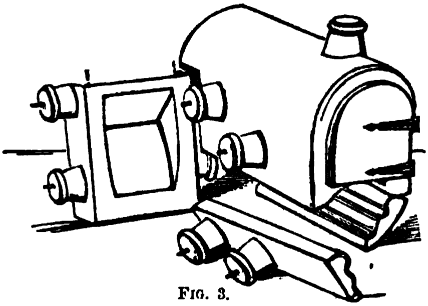


FIG. 3.

MONTHLY CHRONICLE.

JUNE has been crowded with exhibitions. The Great Summer Show of the Royal Horticultural Society, which occurred early in the month, was one of the finest assemblages of plants which has been seen for many years, and was well attended. At this Show the Coleuses were first brought out in competition groups, and they promise to add a most interesting new feature to our shows, the plants being very manageable and very striking in the effect of their colouring. The addition of Mr. Anthony Waterer's Grand Show of American plants to the ordinary attractions of a great flower show, made this a red-letter day at South Kensington, for this glorious exhibition, made up of the gems of perhaps the finest collection of Rhododendrons in existence, has been more attractive this year than ever. The Second Grand Show at the Crystal Palace, and the Rose Show at the same place, have been held during the month, the latter not at all comparing as to quantity with the shows of previous years. Messrs. John Waterer and Son's Show of Rhododendrons, which has been held in the Regent's Park, has been a very fine one; and before these remarks reach our readers, the Royal Botanic Society will have commenced in the same locality its Second Great Show. In Scotland, both Edinburgh and Glasgow have had their gatherings; and in the North of England extensive and high-class exhibitions have been held at Leeds and at York, in connection with which latter, a testimonial, consisting of a handsome gold watch and chain, has been presented to Mr. Wilson, the indefatigable secretary, by the exhibitors and judges—a mark of appreciation which speaks well for the management of the Show.

—— DR. VOELCKER exhibited, at a recent meeting of the Royal Horticultural Society's Scientific Committee, a sample of Manure for Vines, said to induce early maturity, and the production of fine fruit. On examination he had found that the Manure in question was composed of the boiled bones used in the manufacture of glue. These were afterwards ground to powder, and sold at a price far exceeding their real value. Bones that had been boiled were considered preferable as a Vine Manure, inasmuch as they contained a relatively larger amount of phosphate of lime, and a smaller quantity of nitrogenous matter, the which latter tended to favour the production of leaves at the expense of fruit. In the course of conversation on this matter it was stated that in the south of France the custom was to apply but little nitrogenous manure to the Vines, as the flavour of the Grape is supposed to be injuriously affected by such application. In the Rhine districts, on the other hand, the growers avail themselves of every particle of manure that they can procure—a difference of treatment which may probably be explained by the difference in soil and climate of the two localities.

—— WE may state, on M. Van Houtte's authority, that the new *Iresine Lindeni* proves to be an exceedingly effective ornamental plant for the summer flower garden. The excessive heat of last summer in no way diminished the beauty and luxuriance of examples which were planted in the open ground, fully exposed to the sun; and they were also found to be unaffected by 5° of frost (27° Fahr.). The difficulty of preserving *Iresine Herbsti* during the winter is but too well known. This disadvantage is not shared by I. Lindeni; all that it requires in the winter months, says M. Van Houtte, is a cold greenhouse, where its robust constitution enables it to pass the season successfully with but little attention.

—— THE Scolime d'Espagne is the name of a vegetable cultivated largely in Spain, where it is esteemed as a great luxury, and regarded as both a wholesome and a profitable crop. The root is white, resembling an Altringham carrot, and when cooked and served with melted butter, it eats like well-blanched seakale. It is to be grown like carrots or parsnips, except that it must not be sown before the middle of June, or else it starts into flower, and the roots become useless. It is quite hardy, takes only four months to grow to maturity, and may be introduced as a second crop. The roots keep good for use from October till March.

—— NEVER earth up Cardoons, or many of them will be lost by rotting, or eaten by worms. The following mode of blanching them is all that can be required:—On some dry day towards the end of October dig in any corner a pit 5 feet deep, about the same in width, and of sufficient length. Cut off the green tops of the Cardoons, dig up the roots, and plant them in the pit as close as possible, so that they do not touch. Close in the pit with planks to throw off rain, and cover with straw or litter to keep out light. After the first fortnight examine every week, and take out all that are sufficiently blanched. If not wanted for use, put them away in any dry dark room or shed, where they will keep good for two months.

—— THE Maple, known as *Acer Wagneri laciniatum*, is shown by a figure given recently in the *Revue Horticole*, and representing a forked branch, one of the divisions of which bears leaves of A. eriocarpum, the other the laciniate leaves of the above-named variety, to have originated as a sport from A. eriocarpum.

—— TO insure the success of Orange trees grown in boxes or in pots, observes Mr. Robinson in his *Gleanings, they must not in any cases be allowed to grow in the house.* All their growth must be made *out of doors;* and it is a matter of fact, that if the orangery is to the south, no matter what trouble may be taken to prevent their starting, the plants will be beginning to shoot a long time before the weather is mild enough to permit of their being placed in the garden. A good orangery should have a northern exposure, with plenty of windows to admit the light, and every convenience to give full air when it is not frosty. A winter minimum of 36° to 40° will suffice.

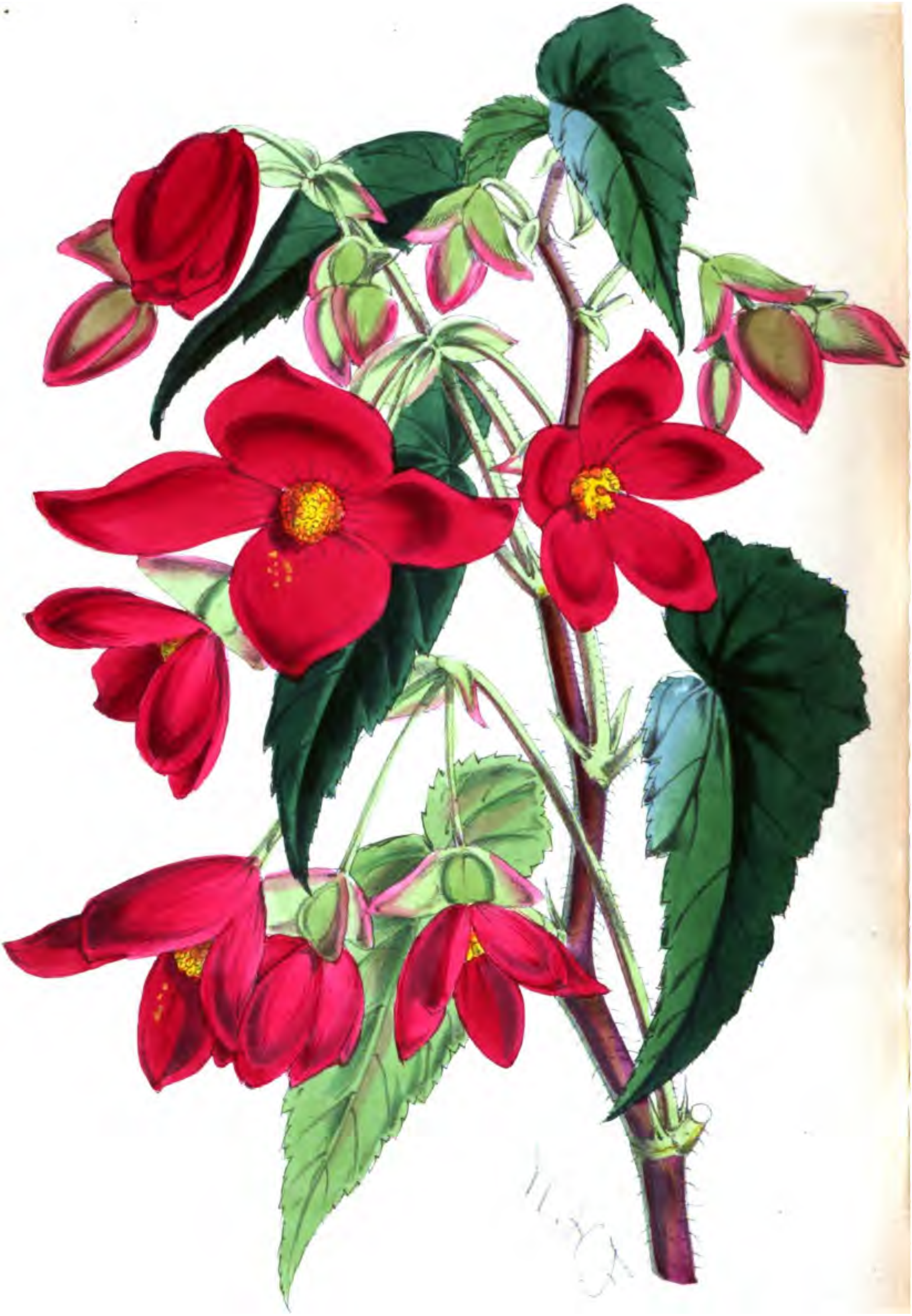
—— THE great secret of growing good Lettuce is good cultivation. Dig a plot of ground a foot or eighteen inches deep; lay upon its surface good rotten horse manure, six inches deep; cover it over with three inches of good soil, tread it firmly when dry; plant good plants at the proper distance; deluge with water when necessary, and it is impossible to fail to grow good Lettuce.

—— THE *Eucharis amazonica* bids fair to rival the Lily of the Valley and the white Camellia for bouquet-making, and is very extensively used in that way. Mr. Howard's plants, the finest which have ever been seen, were obtained by having recourse to heavy waterings occasionally with mild liquid manure, a genial stove temperature, and repeated syringings when in a state of growth. When, being in a growing state, they wanted water, they were not simply watered once, but the first was considered merely a preliminary dose, and two others were given. The fact is, that too frequently unthrifty plants are simply dying of starvation from getting insufficient waterings.

—— COMPOSTS are important elements in plant-growing. A good mixture for soft-wooded plants may be thus prepared:—Procure two cartloads of rich loam with the turf, and as free from oxide of iron as possible. Then get from the nearest stable, where the horses are highly fed, a large cartload of dung, selecting that which has been thoroughly soaked with urine. Place each in a separate heap, three or four yards apart, shaking the manure out, and mixing it together, the same as in the preparation for a hot-bed, only it must not be allowed to heat violently, to prevent which it will be necessary to shake it out every three or four days; in a fortnight it will be fit for use. Then mark out the ground, say, six feet long and four wide, and upon this place a layer of the hot dung nine inches deep, then a layer of loam, and so proceed, reserving a good layer of loam for the top; beat the manure firm, but leave the loam loose, and square up the work properly at the last. Then place over the heap loose litter to the thickness of twelve or eighteen inches, and cover the whole with mats closely pegged down; the object being to excite fermentation, and to prevent the escape of ammonia. The heap may remain in this state for a fortnight or three weeks, or until the heat subsides; then turn it over, taking care to throw the sides into the middle, and to mix the loam and dung thoroughly throughout. The covering must be again put on, and remain on until fermentation has ceased.

Obituary.

—— THE Rev. JOHN SMITH, D.D., died on the 30th ult., at the Manse, Ecclesmachan. Dr. Smith, who was a valued occasional contributor to our pages, was the son of the late Mr. Smith, of Hopetoun, and in early life acquired such an intimate knowledge of practical gardening as enabled him, when dealing with horticultural matters as a relaxation from his ecclesiastical duties, to wield his pen with a degree of force and precision which has seldom been equalled, and perhaps never excelled. Of late years his ecclesiastical duties had so far multiplied as to leave him comparatively little leisure to enter the arena of horticultural discussion, though he retained to the last his love for gardening, and an abiding interest in all that was passing in the world of horticulture.



Begonia Sedeni.

BEGONIA SEDENI.

WITH AN ILLUSTRATION.

WE learn from the Messrs. Veitch and Sons, of Chelsea, who are the fortunate raisers of the subject of our plate, and to whom we are indebted for the opportunity of figuring it, that it was obtained by crossing B. boliviensis with an unnamed species, not yet offered for sale. It was raised in 1868, and was exhibited on June 2 of the present year, at South Kensington, where it obtained a First-Class Medal and Certificate; and on June 30, at the Regent's Park, where the highest honours were also awarded to it.

We believe that this new Begonia will prove one of the most ornamental and valuable of our decorative plants, for not only are its blossoms large, abundant, and highly coloured, but its habit is in every way irreproachable; and as it thrives well—so we are informed on the best authority—in a temperature of 55° to 60°, which suits B. boliviensis, there can be no difficulty on the score of cultivation. Our figure will show that we do not exaggerate its beauty.

Begonia Sedeni is a soft-wooded plant, with erect hairy purplish-red stems. The leaves are obliquely ovate-lanceolate, tapered to a long point, duplicately serrate, of a dull green, with pale-coloured veins, and red hairs which show as a reddish fringe at the edge. The cymes are three-flowered, axillary, on reddish peduncles four inches long, bearing a pair of bluntly-ovate bracts subtending the three pedicels, which are about an inch and a half long. The central or larger flower is male, and has two ovate sepaline divisions an inch long, and two oblong ovate petaline ones an inch and a half long, while in the centre is a tuft of yellow stamens. The two lateral flowers are female, somewhat smaller, with five oblong segments, and three contorted yellow stigmas, surmounting a three-winged ovary, which has one of the wings prolonged. It is most floriferous, the young plants, when only six inches high, developing blossoms freely. M.

MONSTERA DELICIOSA.

SOME readers may remember this under the old name of Philodendron pertusum. We have grown the plant for its fruit for a great many years, and, as was remarked at the Fruit Committee on the 6th ult., when a ripe fruit was exhibited, no plant could be more easy to cultivate. We have been in the habit of planting a lot out every summer in a sheltered situation, with many other choice plants, and few prove to be more interesting than this, more particularly if a lot of fermenting leaves and short grass be trenched in before planting. This gives the plant more vigour, and tends to assist in developing its magnificent and singular-looking leaves. These, like those of many endogens, spring as it were from the bottom of the previous leaf-stalk, which seems to push out the top of the next leaf, the leaf itself being bent down against the side of the stalk, or something like a flag rolled up. The leaf, under favourable circumstances, lifts itself gradually, and develops into a blade 3 ft. 6 in. by 2 ft. 6 in. Curious as is its manner of unfolding, it is rendered even still more curious by the small threads that connect the outer segments of the leaf, giving it an entire and perfect outline. These are soon broken by wind or movement.

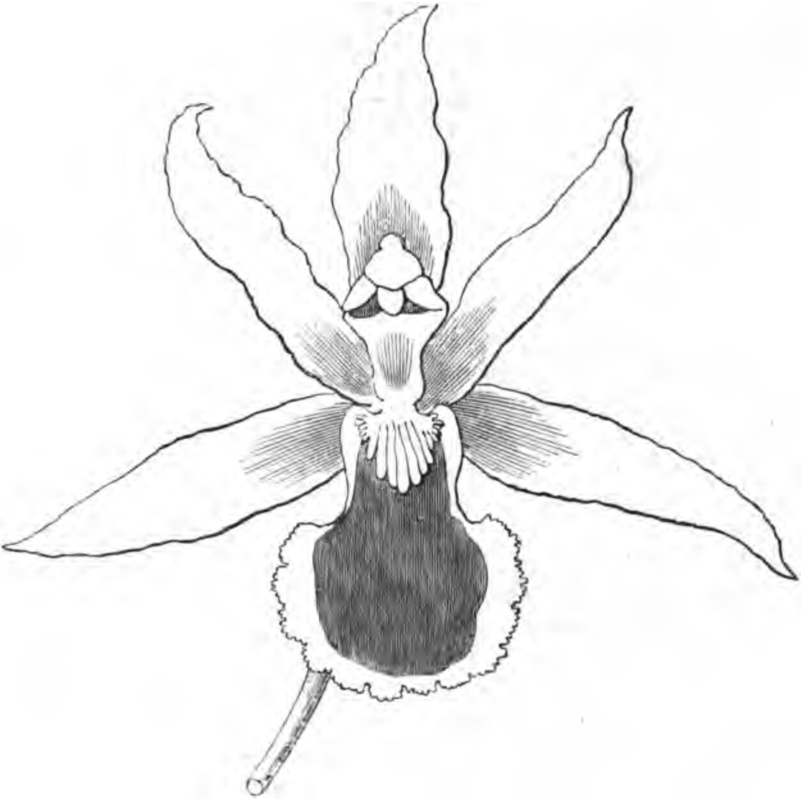
We have generally grown the Monstera planted out in small bricked-up corners of cool houses, where we could, by an alteration of the plants, make the most use of the sun heat in summer. It will succeed perfectly, I have no doubt, in a common greenhouse where vines are grown, and where in the summer months the application of a little extra heat would ripen the fruit sooner. With us, it takes twelve months from the time of blooming. Of course, there is mostly a succession of fruit. The report of the meeting alluded to states that this fruit is very delicious. In my opinion, it is one of the most delicious fruits grown, and if allowed to grow freely, instead of being hampered in a pot, the fruit loses the little asperities or spiculæ that cause a peculiar tickling sensation in the throat in some cases. I considered, at one time, that there were two varieties, but I am now convinced that the difference is simply due to the conditions of growth. Some of our first fruits this year were from 14 in. to 18 in. long, with a good depth of the eatable part. One ripe to-day is scenting the air some distance round the house—more so than a house of Pine Apples would do.

The habit of the plant is creeping, or, if it were consistent, we might say stalking, as the rootlets come from the stem, at a foot or 18 in. from the ground, and form fine strong spongelets as thick as one's finger. These on reaching the soil either penetrate it or go along to the wall, where they spread out into tufts of numerous rootlets. Any sort of soil appears to suit its growth. We have always used good loam, and a bottom of brick rubbish.

Cliveden. J. F.

ZYGOPETALUM AROMATICUM.

THIS is an old acquaintance under a new name. Looking to its mode of growth, it might, indeed, be properly referred to the Warscewiczellas; but the difficulty of separating the Huntleyas and Warscewiczellas from Zygopetalum proper, has evidently induced Professor Reichenbach to adhere to the older name. It is certainly a very attractive plant, and in good hands it yields quantities of flowers. Accustomed as most people have been to grow it in an intermediate temperature, they find it apt to go off, the leaves becoming spotted, and then dying away altogether. A cool temperature seems better suited for its wants. Mr. Pilcher, who is growing his batches of cool orchids to wonderful perfection, manages these things in a cool shaded house better than any one I have yet seen. The whole group is without blemish of any kind, and as green as a Scotch leek. So grown, it is quite ornamental, the ligulate leaves coming from the concealed crowns quite numerously, and the flowers proportionately so. A too free production of flowers, however, induces spotting on the leaves. The great desideratum evidently is to grow the plants cool in summer, to get the leaves in a good state of consolidation during autumn, and to keep them on the dry order during the resting season. Any moderate temperature with a minimum above 40° will do; less than that is likely to be attended with unpropitious results.



The fragrant flowers come isolated from the growing shoots, and have pale apple-green sepals and petals, and a deep-shaded violet lip, with a broad margin of white. The crest, like that in Zygopetalum maxillare, is singularly attractive. The plant comes from Chiriqui. J. A.

CALVILLE BLANCHE APPLE.

IT is a singularly ridiculous evidence of the times, that no man dare to give expression to the opinions he entertains on any subject, without some opponent setting himself up as a *doctrinaire*, and finding fault with the opinions expressed. Mr. Tillery, whom I have not the pleasure of knowing, seems to be no exception from the general rule, and must needs assail me for having an opinion respecting his new acquaintance and evidently pet apple. Not only so, but pluming himself on that little knowledge which short acquaintance necessarily involves, he elects himself as champion of "the Calville Blanc." What I said of the White Calville or Calville Blanche Apple (p. 77) is as true to-day as it was the day I wrote it; and I consider it is the duty of every social economist and lover of his kind to placard the truth, whenever and wherever opportunities present themselves. If Mr. Tillery wishes for better evidence than "ocular demonstration" and "practical experience" affords, I question very much whether he will find it in discussing the merits of fruits which soil, situation, temperature, and the elements make so different in different situations. However, *chacun à son goût.*

Jersey. C. B. S.

EVILS OF ACCLIMATIZATION.

SPARROWS AND RABBITS IN AUSTRALIA.

IN some remarks of mine in a former volume of the FLORIST (2nd series, iv., 122), I wrote respecting Sparrows destroying young peas and devouring gooseberry buds, as follows:—"Our brethren at the Antipodes are stated to have been at great expense and trouble in introducing the sparrow into that quarter of the globe, but I am afraid they will yet be sorry for trying the experiment. Mr. Sparrow will be sure to colonize faster than the inhabitants; and, like the brown rat, he will require all the ingenuity of man to keep him within bounds." At the time I wrote this, I did not expect to see the fact so soon verified as it is, by the following extract from the communication of a Melbourne correspondent:—"The sparrow is another importation against which we ought to take up arms, so abundant are these birds now in every direction; but for the common belief that he earns his living by keeping down the caterpillars and noxious insects in the fields and gardens, it must certainly be admitted by the sparrow's best friends—of whom I profess myself one—that in his moral qualities of impudence and shrewdness, he does not degenerate in this climate. He is equally at home among the fowls in your farmyard, astonishing some grave old hen by withdrawing a choice morsel from under her very beak, or in making a raid on your seeds, or on your vineyard and cherry trees just as the fruit is ripening, of which he is always himself well informed by experiment." It must be admitted that if the sparrow is so fond of fruit in Australia, he must have acquired a new taste there; for with all his faults with us, he has never been considered a fruit-eater by gardeners.

The other importation, that of wild Rabbits, into Australia, threatens to be a great curse to the settlers, for they are breeding so fast that they will soon starve the sheep out of their runs. The Melbourne correspondent says of them, "that they are spreading more or less all over the country, and I have seen them scampering about even in the gardens near Melbourne. As food they greatly affect some of the most beautiful of our flowers, nothing, however, coming amiss to them, and they are therefore becoming the terror of horticulturists. Now that the plague is on us in full force, we can, of course, all very easily account for what no one foresaw." In such an immense and thinly-populated country as Australia, the catching of these animals to keep them within bounds would be an absolute impossibility, and even if practicable the expense would be enormous.

Welbeck. WILLIAM TILLERY.

ROSES AND ROSE-SHOWING.

FROM many parts of England letters have reached me, conveying the unsatisfactory intelligence that the first bloom of Roses has been indifferent. Aphis and mildew, with buds sealed, dingy in colour, and falling unexpanded, were doubtless very prevalent features in the summer bloom of 1869. But to all who may have experienced these disappointing results I would say, take courage. Wash your plants to destroy the insects; dust with sulphur to check the spread of mildew; water if dry; cut off all remnants of passed and passing flowers, and bide your time. I have often seen an indifferent summer bloom followed by a magnificent display in autumn; and if the present and next month prove favourable, there is good reason to expect such a result this year.

But, while the summer bloom of Roses has been generally indifferent, it has not been universally so. In my nurseries, and in other nurseries and well-known gardens in Hertfordshire, the flowers on the old plants never were finer or more abundant. The mass of my young plants are hardly yet in full bloom, as it is my practice to remove the first blossoms, by which means larger heads, a more regular growth, and more thoroughly ripened wood—conditions essential to the future well-being of the plants—are obtained. This stopping of the young shoots produces an intermediate flowering in July and August, which has been already good, and still promises well.

It may be some consolation to those who have suffered disappointment this year to know that it is a matter of season rather than of cultivation, and therefore more or less beyond their control. The cold nights and sunless days are at the bottom of the mischief. I have recently been through the principal nurseries in France, and find the same result, only in an exaggerated degree, there as here. Never were the Roses there so few and indifferent. The grand Rose Show which was to have taken place at Brie-Comte-Robert in July has been postponed, and the growers intend showing their flowers at Tournay in September.

Finding but little work for the eyes when in France, I made the best of the circumstances by using my tongue and ears in discussing various knotty points in Rose culture with the most intelligent growers.

In England there are two classes of rose-growers,—those who grow for plants, and those who grow for flowers. The two points are not usually combined in the same individual with the highest degree of success. As the results sought are different, so are the means used in their attainment. Those who grow for show let the dormant buds of the last year's budded plants flower from the first growth, and by means of high manuring, copious watering, and disbudding, induce a fat growth and fat flowers, which, by the use of hand-glasses, flower-pots, mats, canvass, and other warming, bleaching, shading, or disbudding processes, as the case may require, obtain flowers of a size and complexion which are not often met with except on the exhibition tables. True, the garden during this process is in a state of infinite disorder, but what does that matter to your exhibitor? He grows for a purpose, and attains it. The grower for plants, on the contrary, stops the shoots of the last year's budded plants when only a few inches long, whereby he destroys the first bloom; but he gets a later bloom, and, what he chiefly aims at, instead of a few stout and often ill-ripened shoots, many well-placed shoots of moderate growth, and well ripened.

In France, although some growers show and some do not, there is not this broad difference in their practice of cultivation. All grow for plants. I discussed at length with several of them the different ideas of showing prevalent in England and in France, and agreed with them that the extra size of the flowers obtained in England by the disbudding process was dearly bought by the absence of flower-buds. I discussed this with M. Margottin, especially at the flower-show at Sceaux, where the roses were in some cases very good. There was one fully expanded flower of each sort exhibited, surrounded with leaves, and two, three, or four beautiful buds in various stages of development. There was far more beauty, to my eye, in these Roses, than in the larger flowers seen afterwards at the Crystal Palace and Kensington, leafless and budless, bald and unnatural, though very tidily set up like so many rows of balls or of teacups in a toy or china shop. But *chacun à son goût*.

The effect of a rose in the garden, the *tout ensemble*, constitution, constancy, durability, leaves and buds as well as flowers, enter more into the calculation of the French than the English grower. Here, too, I venture to think that the Frenchman is right. But here, again, *chacun à son goût*.

Of the new Roses of 1867-8, I have seen the following good both at home and abroad:—

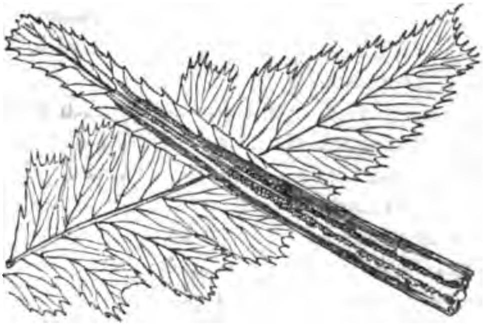
Alice Dureau, Aristide Dupuis, Baron Haussmann, Boule de Neige, Clotilde Rolland, Comte Raimbaud, Curé de Charentay, Duchesse d'Aoste, Elie Morel, François Fontaine, Impératrice Charlotte (of doubtful constitution), La France (a grand garden rose), Madame Barriot, Madame Chirard, Madame la Baronne de Rothschild (very beautiful), Madame Marie Cirodde, Madame Noman (a good flower, but delicate), Pitord, President Willermoz, Prince Humbert, Reine du Midi (much like La Reine), Souvenir de Caillat, Souvenir de François Ponsard, Sophie de la Villeboisnet, and Vicomtesse de Vezins—hybrid perpetuals; Souvenir de Pierre Vibert—perpetual moss; Clotilde (much like Bougère), and Jean Pernet—tea-scented. The colours of these varieties will be seen on reference to any of the Rose-growers' catalogues.

Of the new Roses of 1868-9, I am waiting for further evidence, and shall make them the subject of a separate paper by and by.

Paul's Nurseries, Waltham Cross, London, N. WILLIAM PAUL.

LOMARIA CILIATA.

ONE of the smallest of arborescent greenhouse ferns, and one that must recommend itself to cultivators by its distinctness and beauty. It has been introduced into our gardens within the last two or three years by Messrs. Veitch and Sons, from New Caledonia, and in some respects bears a certain resemblance to Lomaria gibba, also a New Caledonian plant, and one of the most elegant evergreen ferns of modern introduction.



Lomaria ciliata forms a slender arborescent caudex, of from six inches to a foot in height, and an inch and a half in diameter. The fronds have a dark ebeneous stipes, and an ovate or oblong-ovate lamina, which is pinnate below, pinnatifid and caudate above; the pinnæ have shallow lobes, which are truncate and emarginate, as also are the pinnæ themselves, and in addition to this the whole margin is fringed by long setiform teeth. The truncate or more or less emarginate pinnæ and lobes, and the ciliated margins, afford ready means of recognition. The fertile frond is narrowed as in other Lomarias, and shows the same kind of division as the sterile ones. A very characteristic figure, the only one hitherto published, occurs in *Baildon's Nature-Printed Ferns*, whence the annexed woodcut of a sterile and fertile pinna are derived. M.

CEPHALOTUS FOLLICULARIS.

HERE we have one of Nature's most singular vegetable forms. While in the genus Nepenthes the pitchers appear to be extensions of the leaves, and in Sarracenia the leaf itself seems hollowed out into the peculiar horn or pitcher-like form, we find that in this remarkable plant the pitchers are wholly distinct from the leaves. It is of small growth, a well-grown specimen rarely getting more than eight or nine inches across, but it is nevertheless one of remarkable interest. It is a native of New Holland, and, therefore, cannot be expected to live long in the intense broiling atmosphere, accompanied by insufficient light, to which we often see it subjected. I have seen the Cephalotus grown in a house devoted to the culture of Victoria regia, and to flourish for a time, the plants being covered with a bell-glass, and allowed very little air; but they were standing within *six inches of the glass roof, and consequently received every ray of light*, being merely shaded during bright sunshine by tissue-paper. Under such treatment the plants grow fast, but I have never known them live long. I have also seen it grown within six inches of the front lights of a cool greenhouse, with the bell-glass tilted so as to give plenty of air, the pot in this case standing in a pan containing an inch of water, which must have kept the material in which the plant grew *completely saturated*. The plants in this case were quite as large as any I have ever seen, and produced pitchers in quantity, almost as black as ebony, and altogether the plants had a vigorous appearance, that I never saw in those grown under the very hot system.

The treatment I recommend is intermediate between these two extremes. The plant evidently grows much faster with a brisk day temperature in the growing season. To be placed as near the glass as possible at the end of a house where Muscat grapes are well done, with a fair amount of heat, are conditions which suit it most admirably. The bell-glass under which it is grown should be kept a little tilted day and night, and should be shaded during strong sunshine with tissue-paper, which admits plenty of light,—a most essential conducive to its continued well-doing. It is propagated by taking off the small shoots it throws out from the side, or by division of the crowns. This should be done in spring just as the plant is showing signs of growth. The material in which I find it to thrive best, is a mixture of three parts rotten sphagnum, chopped fine, two parts crocks broken quite small, the largest not larger than small peas, and one part fibrous peat, a handful of sand being mixed with the whole. The object is to secure a material that will take any amount of water without becoming sour.

Into this compost repot every spring, getting away as much of the old soil as can be done without injuring the roots. Use pots from two to six inches in diameter, according to the size of the plant. Pot high, the crown of the plant being kept well up, and plunge the pots in others two or three sizes larger, the vacancy being filled up with sphagnum. The whole should be well moistened every other day during the growing season, and once or twice a week when at rest. On no account ever allow the plant to become dry, or it will suffer materially, if not die. Keep a good look-out for green fly, which gets on the under-side of the leaves, and does irreparable mischief if not discovered.

As I have before observed, the plant delights in a brisk temperature whilst growing, say 60° to 70° by night, with a rise of 15° or 20° by day. When at rest, 45° to 50° at night, with 5° or 10° higher by day. Under these conditions, the plant will do well and live for many years, going on increasing by throwing out suckers.

Summerfield, Bowdon. T. Baines.

STRAWBERRIES IN 1869.

THOUGH the seasons of 1868 and 1869 have been very fertile in general experiences for the Gardening fraternity, yet, perhaps, in no other instance have the constantly varying changes of temperature produced so marked an effect as in the case of the Strawberry. It will be remembered that the season of 1868 was a very short one, owing to the fact that as soon as the strawberries began to ripen the temperature rose to such a degree as to be almost tropical. The consequence of this was that all the late fruits were literally roasted into colour long before they had attained maturity; and owing to the long drought with which this extreme heat was accompanied, the plants were forced into a prematurely dormant state just at the time when they ought to have been making their best growth for another year's fruit. In fact, they did not commence to make growth until the rain came in the autumn, and though their progress then was rapid enough, yet the season was too far advanced for them to make well-ripened crowns for another year. Another result of the premature state of rest to which they were brought was that a great many of them started their blooming crowns in the autumn, so that this season quite a large per-centage of the plants have proved quite barren, while in no case could I perceive that there was evidence of a chance for a full crop. And although, from the long-continued low temperature which has prevailed through the spring, the blooming season was retarded by three weeks, still they were not safe, for no sooner were they in full bloom than a frost of seven degrees laid them low, blackening every exposed bloom, so that a good half of only a moderate crop was destroyed, and those only remained which were well protected by the foliage.

From these circumstances, the value of many sorts which possess the valuable property of bearing short footstalks and of blooming under the foliage has been greatly enhanced in such a season as this. One of the sorts which possesses this property in the highest degree is Rivers' Eliza. Under any circumstances of season, I consider it one of the most valuable strawberries that a gardener can grow, for it is eminently prolific, of a fine bright colour, with good flavour, and large enough for most purposes. Next to this for usefulness, I rank the President, a most excellent sort for general use; then Victoria and Sir Charles Napier; and in good years, Reeve's Eclipse, which, however, this year fails completely. These are what I call my stock varieties. Gardeners are so often called upon for dishes upon dishes of strawberries, for purposes for which they would not like to disturb the finer dessert varieties, such as Dr. Hogg, Mr. Radclyffe, the Queen, and such-like kinds, that it is absolutely necessary to keep up a stock of the older varieties, which, although they may not come up to exhibition-point, will, during the season, afford a very regular supply of very fair fruit for all ordinary purposes. In the present season they are my mainstay, and chiefly, I believe, on account of their hardy constitution, and for the reason that they throw up abundance of leaves to shelter the bloom.

I have gathered a few very fine dishes of Dr. Hogg, but the crop is very partial, and nearly close to the crown. Mr. Radclyffe is almost a failure, as are other fine sorts of a similar stamp. I like the way in which Dr. Hogg develops itself in our soil; but I fear Mr. Radclyffe will prove rather tender, with too much of the constitution of the Queen. Our soil is strong, with a cool bottom, and in favourable seasons we have very large crops. I plant a bed every season, and destroy one of an equal size, so that I never have any plants over three years old. The plants are all layered in 3-in. pots as early as possible, and when planted in deeply trenched, well-prepared soil, generally produce a very fair crop of fine fruit the first season.

Redleaf. JOHN COX.

THE OLD MULE PINK.

HOW seldom this good old plant is to be met with now-a-days in perfection and quantity! It is scarcely possible to conceive a more glorious object than a compact tuft of it. It is admirably adapted for all bouquet purposes, and lasts in bloom a tolerable length of time. It strikes freely under a hand-glass, in a shady position, from pipings, taken off as soon as it has done blooming. We grow a striped kind, which is really very pretty.

Wrotham Park. JOHN EDLINGTON.

PLANT HOUSES.

THERE are many forms of hothouse which may be employed successfully for the growth of stove plants, such as span-roofs, half-spans, and lean-to houses, but for the growth of specimen plants the span-roofed house is undoubtedly the best, as it affords the plants more light and air, at the same time that it may be made to form an ornament in a garden where no other style of house could be tolerated. So says Mr. Williams in his new work* on the cultivation of 'Stove and Greenhouse plants, and we quite agree with him. He has in this work given a plan and section of a well-contrived stove and greenhouse, such as may be fully recommended to those about to erect either kind of structure, and which we here reproduce by his permission, accompanied by a portion of the descriptive remarks, which will serve as a specimen of the practical character of the book.

We give here, continues Mr. Williams, a ground plan and end section of a span-roofed house [fig. 1], suitable for the cultivation of specimen stove plants.

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* *Choice Stove and Greenhouse Flowering Plants, comprising Descriptions of upwards of One Thousand Species and Varieties, accompanied by Instructions for their Cultivation.* By Benjamin S. Williams, F.R.H.S. Published by the Author. A much needed practical treatise on the management of the most important Stove and Greenhouse Flowering Plants, and one which may be recommended as a trustworthy guide to the cultivator.

It is 50 ft. long, 20 ft. wide, and 12 ft. high; and contains a table next the outer wall on each side and end, a walk 3 ft. wide, and a centre table, which has a second table 1 ft. higher running down its middle. These tables should be of slate with iron supports, while the floor and path are best concreted with good Portland

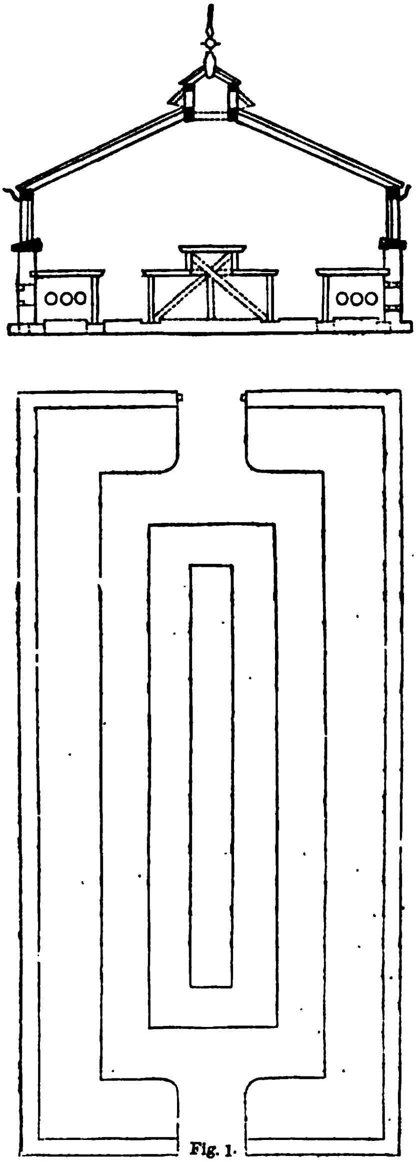


Fig. 1.

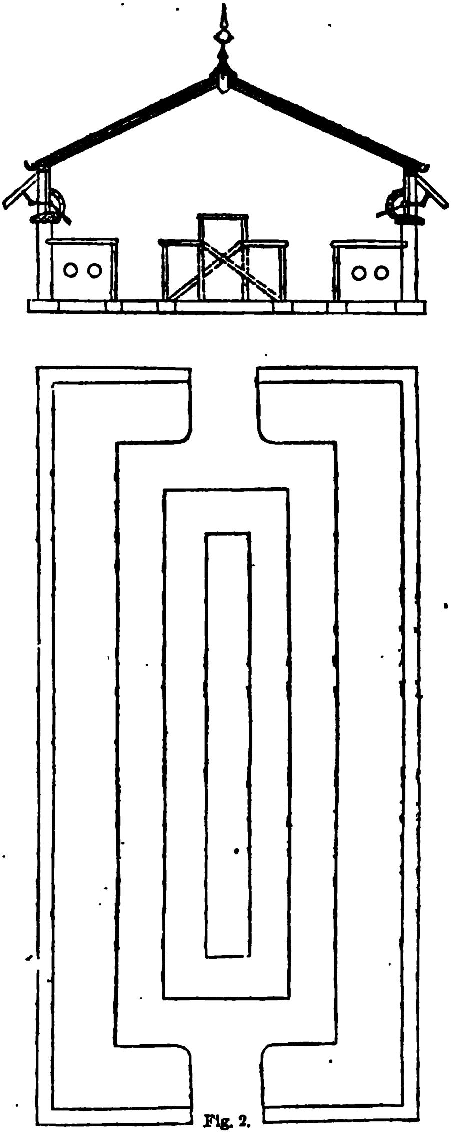


Fig. 2.

cement mixed with sand, which makes a substantial and comfortable floor and pathway, is easily kept clean, harbours no insects, and stands a great amount of wear and tear. The double or folding doors are the best for such structures, because, if large plants have to be moved in and out, they afford greater space than the doors in ordinary use. The doors should always be fixed so as to open inwards, which is more convenient, and besides, the glass is not so liable to be broken through the violence of the wind. The side lights or sashes are 2 ft. in height, and need not be made to open, but instead thereof, some large iron or slate ventilators should be built in the brickwork beneath them, opposite the hot-water pipes; by this means the air is prevented from blowing upon the plants in a raw or cold state. We also recommend that large drain-pipes be laid in the ground, passing from the outside under the foundation to the inside of the house, and rising under the heating pipes, by which means fresh sweet air may be admitted, even in severe weather if necessary, without detriment to the plants. The lantern roof, shown in the figure, we consider the very best style of top ventilation for a stove, because it does not let the cold air in directly on the plants.

So much for the Stove. The Greenhouse (fig. 2) is, it will be seen, very similar thereto in the general features of its construction; but there is this difference, that in the greenhouse, the side lights are all made to open, and the lantern is not used, but the upper sashes of the roof slide up and down in the ordinary way. The underground system of ventilation should be applied to this structure as well as to the stove, as it affords means of maintaining a pure and healthy atmosphere in the interior without injury to the plants even in the most severe weather.

In this practical way Mr. Williams discourses on a variety of general topics, adding special instructions for culture under the various generic headings.

M.

DECORATIVE PLANTS FOR THE PLEASURE-GROUND.

I MAY first notice *Sambucus racemosa aurea,* which should never be omitted, however limited the space. It is somewhat singular that this plant should be so seldom met with; it certainly cannot be on the plea that it is either scarce or high-priced, more likely that it is little known, at least I presume such to be the case, as it seems a stranger both to the professional and amateur gardeners who visit here. This plant is the property of the poor as well as of the rich man; it may be purchased for a few pence, and increased *ad libitum,* as cuttings will strike with as much, if not more, freedom than a willow. We have no plant so well adapted as this to lighten up masses of dark green, owing to its deep golden colour. If planted too profusely, it is apt to dazzle, and become oppressive to the eye. It grows vigorously in any situation, and must be pruned sharply during winter to keep it within limits, and to prevent the plant getting naked at the bottom.

Virgilia lutea belongs to the same class of colour, and is of great beauty, but only during the autumn months. It is not so dazzling as the Sambucus,—more delicate, not so fiery, nevertheless equally attractive. The slow habit of growth unfits it for a mixed shrubbery; it is best adapted to stand as a single specimen, or in groups in an open and rather warm situation.

Liquidambar styraciflua is of a stronger habit than the Virgilia, and will thrive in a more exposed place; still, it cannot be called robust. The leaves during autumn become of a bronze colour, and are exceedingly pretty.

Populus argentea holds a place among our timber trees, but is so very accommodating that it may easily be kept as dwarf as an ordinary shrub by the free use of the knife. Its very silvery foliage makes it a valuable acquisition, either in the park or pleasure-ground, but it comes out with greater effect when planted in a mixture of green. This plant, I feel certain, only requires to be better known to be appreciated to the extent it deserves. It is readily increased by layers or cuttings; even pieces of the root will produce plants.

Acer Negundo variegatum cannot be too highly esteemed. It would be difficult to speak too strongly in its praise, for its white leaves blotched with green produce an agreeable and a charming contrast. Its natural disposition is to spread on the ground when young and to form itself into a round-headed bush, but by keeping the side branches cut back for a few years, and training up a central leader, it will take the form of a handsome tree.

Of this class there are many more plants to accept, and their number is yearly increasing, so eventually it may be hoped that greater attention will be given to the arrangement of colour in our parks and pleasure-grounds.

Tortworth. ALEXANDER CRAMB.

SEASONABLE HINTS FOR AMATEURS.—AUGUST.

WHILST the bedding plants are now in all their beauty, the amateur should carefully look over his garden, and see how he may alter and improve it another season. To keep up the interest in it, the arrangement should be varied as much as possible every year, otherwise it becomes monotonous. The propagation of bedding plants for next season should be commenced at once; most kinds strike freely at this season without bottom-heat, and plants thus propagated are much more easily kept over the winter than cuttings struck late in bottom-heat. Pans or shallow boxes are in general most convenient, as they can be moved about at pleasure; they should be well drained, and be filled with any light soil having plenty of white or river sand mixed with it. The cuttings should be inserted in these boxes, but care should be taken not to plant them too thickly,—no two cuttings should touch. Pans or boxes containing cuttings of Verbenas, Petunias, Pentstemons, &c., should be put into a cold frame; the lights should be kept on for a few days after they are first put in, and they should be kept shaded, if the weather be sunny, to prevent the cuttings from flagging. But the lights, from the beginning, should be taken off at night, that the cuttings may receive the heavy dews which generally prevail during this month; and as soon as the cuttings will stand the weather without flagging, the lights must be kept off during the day as well as at night. Under this treatment, cuttings put in early get well rooted and acquire a strong hardy habit, and are kept over the winter in pits or frames with very little trouble. Pelargoniums of all kinds strike freely in any warm situation in the open air. Good-sized cuttings put in early soon make nice vigorous plants, and are better to winter than very small cuttings struck late. In getting the cuttings, care should be taken not to disfigure the plants or the beds. A shoot should be taken off here and there, where it can be best spared.

As most bedding plants will now be growing freely, the beds should be occasionally looked over, and all rambling shoots should be stopped or regulated, and all decaying flowers and seeds picked off. Dahlias, Hollyhocks, and other tall-growing plants will require to be regularly tied up to stakes. This is a good time to transplant Wallflowers for spring-flowering. A quantity of young plants should be pricked out into a bed for transplanting into the borders when they are cleared for the winter. Lawns should be kept regularly mown, and walks should be kept well swept and rolled.

The stronger-growing hard-wooded plants, out of doors, if standing in a shaded place, should now be removed to a more sunny situation, so that the wood may get properly ripened, which will cause them to flower well next season. The shading of the young stock in pits and frames should now be gradually dispensed with. After the middle of the month the lights will be better off the frames both night and day, unless heavy rains or cold rough weather sets in. Well-grown plants of Fuchsias will now be objects of great beauty, and will, with attention, continue so for some time. They should be kept well watered. Pelargoniums for autumn blooming must now be carefully attended to.

In the Kitchen Garden, the ground between all growing crops should be kept well stirred by forking and frequent hoeings. Broccolis, Brussels Sprouts, Borecoles, and Savoys should be earthed up. If the weather be dry, Celery should be kept well watered, and be regularly earthed up as it advances in growth. As the crops of Peas are cleared from the ground, room will be found for other crops. It is not yet too late to plant Celery for spring use, if from want of room a sufficient breadth has not already been planted. Lettuce and Endive, for autumn use, should now be planted out. The whole of the early Potatos for sets next year should be got up at once, exposed to the sun and air for a few days to green, and then, when dry, be carefully stored away. Sowings of Prickly Spinach for winter use should be made about the 1st and about the 10th of the month; also sowings of Black-seeded Brown Cos, and Hammersmith Hardy Cabbage Lettuce to stand over the winter. Tripoli Onions for spring use should also be sown the first week in the month. Cauliflowers for hand-glasses and winter storing should be sown about the 10th, and again about the 21st. All spare ground may be sown with Turnips up to the middle of the month. Herbs, when fit, should be cut, dried, and tied up in bunches, and hung up in an open-air dry place, or packed away in drawers.

Fruit trees should be carefully looked over, and all superfluous shoots not wanted another season should be removed at once. This will admit more air and sun to the fruit, and to the wood and buds for next year's bearing; as the fruit becomes ripe it should be carefully gathered in a dry state. To protect the fruit from wasps and flies, the trees should be well covered with hexagon netting. As soon as all the fruit is gathered off the Raspberries, the old canes should be cut clean away to admit more sun and air to the young canes. Fresh plantations of Strawberries should be made at once, if not done last month. Grapes in greenhouses will begin to colour towards the end of the month. They should have abundance of air during the day, and a considerable amount at night also, with more or less fire heat according to the state of the weather, and consistently with the welfare of the plants in the house.

Stourton. M. Saul.

PARADISE GEM MELON.

WHERE early Melons are in demand, this variety will undoubtedly prove a real acquisition. I planted it in a pit three weeks later than the other kinds, but it was ready to cut equally as early. It has, to judge from appearance, some of the Malvern Hall breed in it. It is a remarkably free grower, of good habit, sets most freely, is nicely ribbed, and of average size. Where scarlet-fleshed melons are at all in demand, I would advise a trial of the Paradise Gem. J. E.

PEGGED-DOWN ROSES.

FEW persons are aware of the beauty and elegance of Pegged-down Roses, when treated as they should be. It appears strange that so few are to be seen grown on this system, although all who once see them agree in saying that Roses are never so effective as when thus managed.

I will attempt to give a short sketch of some of my plants as they are at the present time. I have just counted 27 blooms on *one* branch of John Hopper, 23 on one branch of Madame Boll, 29 on one branch of Général Jacqueminot, 19 on one of Comtesse de Chabrillant, 18 on one of Louise Odier, 24 on one of Souvenir de Charles Montault, 30 on one of Anna Alexieff, 16 on one of Madame Clémence Joigneaux, and there are scores of others with nearly the same number of flowers. Now when it is considered that each plant has from five to eight branches loaded with blooms, the effect produced by them can be imagined. I may also state that although these wreaths of Roses are so plentiful, the blossoms are by no means inferior to those on the standards, as the greater portion of the flowers that have this year brought me ten first prizes, including four silver cups, have been cut from these beds.

Perhaps the cause of the pegged-down system not being more general, is the length of time required to bring the plants into perfection, viz., three years; but against this drawback the cultivator must consider that they never wear out, as the young wood *only* is each year pegged down, all the old blooming shoots being cut away. Some of my beds have been planted twelve years, and are in as fine condition now as when they were three years old.

To those who contemplate growing Roses on this plan, I will give a few words of advice. Obtain plants on their own roots only: do not be persuaded to plant any others. Plant this autumn, and cut down to two or three eyes next spring. The next spring cut down to about four or five eyes, and by the following spring you will have shoots from four to eight feet long, which will produce the effect I have endeavoured to picture. One cause of the great beauty of these Roses is that both flowers and foliage are brought under the eye, yet not so low as to become soiled and spoiled by the storms. Another advantage that I have not yet spoken of, is, that the Roses are in bloom both earlier and later than on any other system, as the points of the rods are always into bloom before the base, and when the latter portion has bloomed, the young strong shoots from the stool produce such magnificent flowers up to nearly Christmas as can be obtained in no other way that I am acquainted with. Let the ground be well trenched and manured; plant roses on their own roots only; and I am sure the cultivator will be gratified with his experience of Pegged-down Roses.

The Cedars, Castle Bromwich. CHARLES JAMES PERRY.

HOW I GOT OVER MY "DISENDOWMENT."

ABOUT two years ago, owing to a change in the government of this place, I was "disendowed" from having my usual supply of Manure from the farm-yard, and was told that if I must have manure, I must buy it. These were hard lines; for to send "to Coventry" for manure would have taken more of our time and money than my estimate would permit. There was, however, no getting away from the fact that I was disendowed of my chief staple, "manure,"—that which gardeners so much depend upon for the production of good vegetables, and which are required at this place in no very moderate quantities. The problem generally held before the gardener to solve is this,—Given a piece of land, how to grow, during all your life (and the lives of as many as may live and die in the culture of that piece of land), a good and plentiful supply of vegetables, rich and crisp, and in every way equal to vegetables seen at any one's table. In my case, the supply of vegetables was to be nothing short of that produced previously to the disendowment of manure, and I had to set about the manufacture of manure as best I could.

Having a large tract of pleasure-ground kept under the mowing machine, it occurred to me that the short grass, which hitherto had been a nuisance, might in some way be utilized. I could not give it away, and when it was thrown into heaps it stunk intolerably. I resolved, therefore, to try how cattle could be fed upon it. On the strength of this idea I immediately set to work, and in the rubbish yard made a cattle-shed and fold-yard, sufficiently large for the accommodation of four animals. The yard littered down, and the water laid on, I was prepared for the cattle. A farmer close by let me have four yearling heifers, for which he allowed me so much per week for their keep. This was about Christmas, and until grass came these animals were fed with hay saved from those parts of the pleasure-ground which it is not so necessary to keep closely mown. When, however, grass-mowing with the machine commenced, it was carted into the fold-yard, and readily eaten up by the cattle, and any excess of what they required to eat was trodden under foot and speedily made into manure. All refuse from the garden was thrown into this place, and was either eaten or trodden into manure. In the course of the summer the cattle throve amazingly, and it was now evident that the scheme was a good one, as I could manufacture manure as fast as it could be dug in, and not in very moderate quantities either.

Having thus given a brief statement of how, in the manufacture of manure, I got over my "disendowment," I may be allowed also to state in what other respects the fold-yard proved useful. Every one knows what luxury there is in the keep of a cow for a family, and on the strength of what I knew the cattle-yard could do, I bought a milch cow, for which I paid £15 10s., and during the first year, besides supplying my house with what milk and butter we wanted, we sold, including the price of the calf, milk and butter, as much as exactly realized the purchase-money of the cow. The cow is this year free to begin with, and I am pleased to say in better condition, and so far as the season has gone, yields more and of even better quality than her yield of last year, which is proof sufficient that her keep and habitation in the rubbish yard is as nearly as possible that which she likes. In addition to the animals mentioned, I have also some pigs, which thrive amazingly on short grass, cabbage leaves, run cauliflowers, &c., and which add much to the richness of the manure. In the same yard I have also some fowls, so that this yard not only produces a plentiful supply of manure for the garden, but supplies my house as plentifully with good milk, butter, bacon, and fresh-laid eggs,—things not much to be despised either in town or country. In this case of "disendowment" it has happened to prove better for me in the end, than if my supply from the "state farm-yard" had been continued. I should only have got my supply in driblets, now I have it in abundance, either well-made or under-made, at any time that I want it. Lest it be considered that I was eagerly selfish in establishing a cow for my own use, I should say, in justice to myself, that eight years ago this formed part of my agreement; but during that period circumstances in my house did not particularly require a cow, and not until I really wanted it did I make use of my privilege.

If a man has for his motto "Live and let live," and this coupled with a fair share of well-directed energy, depend upon it, it matters little whether or not that man be "disendowed," or even if "disestablished," he will right himself again. I have no doubt there are many large gardens similarly circumstanced to those of which I have now charge, where the short grass might be utilized something after the manner above described.

Combe Abbey Gardens. WM. MILLER.

NEW ROSE-COLOURED CANTERBURY BELL.

I MUST beg a small space in the FLORIST AND POMOLOGIST to write a word of praise in reference to this fine new biennial. It is a true pale rose-coloured variety, with flowers as large as the ordinary blue and white varieties, but surpassing either in beauty. It was distributed by Messrs. Vilmorin and Cie., of Paris, some two years ago. It has been very fine this season at Chiswick, Mr. Barron having grown many plants in pots for conservatory decoration at South Kensington, for which purpose it is admirably adapted. There are both double and single varieties of this colour. I got some seed from Messrs. Vilmorin and Cie. in 1867, but not a single plant has produced rose-coloured flowers. I inferred from this that the character of the flower had not been fixed, and that it was uncertain if it would come of the new colour. Mr. Barron informs me that not one of his plants has failed to produce rose-coloured flowers [they were very beautiful], so I am driven to the inference that what I received as seed of the rose-coloured was simply seed of the old white variety.

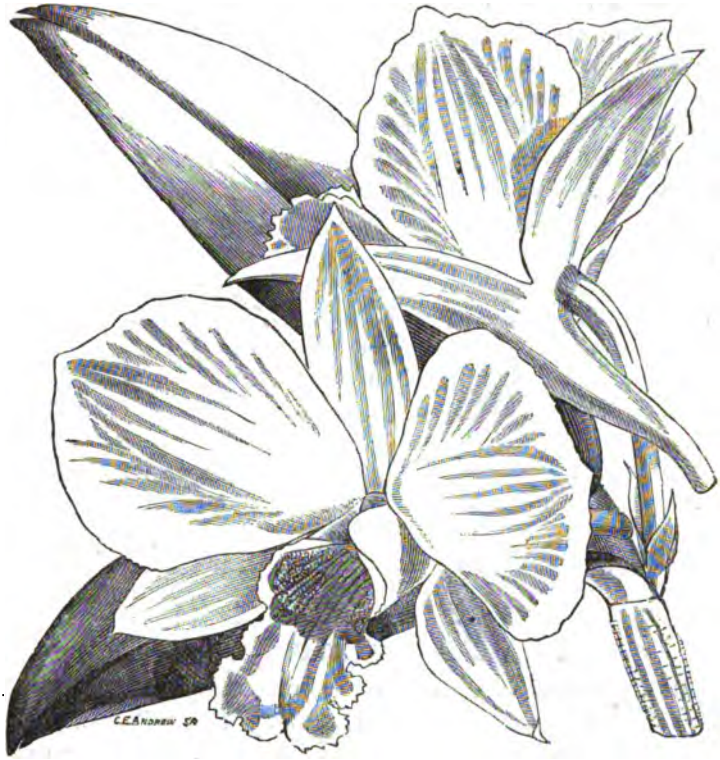
QUO.

DENDROBIUM JAMESIANUM.

THIS new Dendrobe belongs to the Nigro-hirsute section, and is closely related to D. infundibulum. It has stiff furrowed stems, oblong pointed leaves split at the apex, and large showy flowers, which are white with the basal convolute portion of the lip of a deep cinnabar red. The cuneate-ovate petals are very large, much broader than the sepals, which are lance-shaped, the two lateral ones being extended backwards into an extinguisher-formed spur. The lip is wedge-shaped and trifid, the lateral lobes red, obtuse-angled, and covered on the inner surface with little asperities, the presence of which distinguishes this from the allied species; the middle lobe white, quadrate, retuse, wavy, and denticulated. The species is a native of Burmah, whence it was sent to England by Colonel Benson, to the nursery of Messrs. Veitch and Sons, where our sketch was made.

The plant has been dedicated to Mr. James Veitch by Professor Reichenbach in the following words:—"It has been our misfortune to have to cancel the

Dendrobium Veitchianum, dedicated by the late Dr. Lindley to Mr. James Veitch, and reduce it to the Dendrobium macrophyllum of Richard [D. macrophyllum, *Hort.* being the D. superbiens, *Rchb.*]. We did, indeed, our best, when naming in honour of Mr. John Gould Veitch a Dendrobium Johannis, and a Dendrobium Gouldii; yet the spirits of the chieftain of the Veitchian family may not be quite reconciled to the loss of the tiger-flowered Dendrobe, with the hispid ovaries and the shining leaves. *Corrigeons la fortune!* Let us try to gratify the feelings of our highly valued correspondent by the dedication to him, under the above name, of this splendid novelty." M.



FRUIT PROSPECTS IN NORTH NOTTINGHAMSHIRE.

IN April there was a promise that we should have a great crop of nearly all kinds of hardy fruits in North Nottinghamshire, but the peculiar weather of May and June has thinned them very much. Pears and Apples will, however, be yet nearly an average crop in most orchards in this locality. With me, Pears as pyramids and bushes on the quince stock show heavy crops, as do most kinds on the walls. Apples grown as pyramids on the paradise stock likewise show good crops, but the young shoots are all sadly infested with aphides, which require constant attention to keep them under. A quantity of cordons on the French paradise stock was planted here last year, and these are now bearing nice crops. Apricots on the open walls are nearly everywhere a failure, and even where the trees were protected by glass lights, the crop is only a half one.

Plums are a very thin crop, except on pot-trees grown on a heated glass-covered wall. Cherries on standards and also on walls have borne good crops. Currants, red, white, and black, are all bearing heavy crops; but I have never seen the foliage before so covered with aphis. Every breeze is now whirling the leaves off, all the bushes being sucked nearly dry by this insect pest, and of course the fruit will be small and flavourless. This has only occurred where the bushes have been grown close together, for those grown in rows, or singly as standards, have partly escaped. Gooseberries this year are a very abundant crop here, and free from caterpillars. Strawberries are cropping very unevenly. Some kinds that were well watered during the dry hot weather last summer, such as Ingram's Prince of Wales, President, Sir J. Paxton, Rivers' Eliza, British Queen, Dr. Hogg, and Cockscomb, are bearing heavy crops. Black Prince suffered very much last year from the dry summer, and crops badly this year; but on account of its earliness, it cannot yet be discarded from a collection. I find that the most generally useful strawberries grown are Rivers' Eliza and Vicomtesse Hericart de Thury, for they can always be depended upon for bearing well on all soils. Another old sort I find the best of all for growing for preserving, namely, the Grove-End or Old Scarlet; this bears abundantly with me this year. Raspberries are a plentiful crop, and the same with Filberts.

Welbeck. WILLIAM TILLERY.

NEW FLORISTS' FLOWERS.

SOMETHING more than two years ago, Mr. Cripps, of Tunbridge Wells, produced, at one of the meetings of the Royal Horticultural Society, some fine seedlings obtained from Clematis lanuginosa. They have not as yet been distributed,—it is said from the difficulty of propagating them. At the meeting of the Floral Committee, on the 15th of June, Mr. Cripps produced a very fine double *Clematis*, the origin of which was not stated; it was named *Excelsior*, and was of a greyish-blue colour, with a kind of flame of reddish-purple along the centre of each sepal, while the centre of the flowers was anemone-like, composed of a bunch of small florets of the same greyish hue. It is perhaps open to doubt whether, when it is propagated, it will continue to produce this double form; but should it do so, it will be a valuable addition to these grand decorative plants. Mr. Cripps also had *Clematis Lady Cicely Nevill*, a large white flower, apparently a seedling from C. lanuginosa, but with eight large and somewhat long and flimsy sepals, instead of the six generally borne by the supposed parent. The double variety was awarded a First-Class Certificate.

The new Coleus eruption, almost a horticultural epidemic for the time being, has not yet subsided, though some appeared to think that the new and handsome golden varieties would prove the very *ne plus ultra* of their production. *Coleus M. Saison*, recently shown by Messrs. Downie, Laird, and Laing, and awarded a First-Class Certificate, marks a decided advance, though it had a delicate look about it. Apparently a sport from C. Veitchii, there is a dark greenish-brown blotch in the centre of the leaves, lit up with deep rose in spots and lines, the leaves being margined with white; it is very pretty, very novel, but it must be admitted, looks as if it would, in the Micawber sense, have to make an effort to live.

The new large-flowered and fancy Pelargoniums shall be reviewed in the usual form later. Plenty of other *Pelargoniums* have received First-Class Certificates. To commence with the double varieties, three new ones have been so distinguished, viz., *Victor Lemoine*, brilliant scarlet, with large and full flowers, the petals unusually broad and rounded; *Wilhelm Pfitzer*, with large flowers of good shape of a bright scarlet hue, and a dwarf and compact habit of growth; and *Marie Lemoine*, flowers large and full, of a soft pale pink, and good habit. The former (which I can't help thinking will prove to be identical with *Victor*, exhibited last year, and awarded a First-Class Certificate) was exhibited by Messrs. Downie, Laird, and Laing, the others by several exhibitors.

First-Class Certificates have also been awarded to the following *Variegated Pelargoniums*:—*Waltham Bride*, from Mr. William Paul, Waltham Cross, a silver-edged variety, with a vigorous and yet compact habit of growth, in character not unlike Flower of the Day, and producing pretty pure white flowers; and *Bright Star*, from Mr. C. Turner, Slough, belonging to the same section, the leaves edged with creamy white, of good habit, with bright orange-scarlet flowers. Also to *Variegated Ivy-Leaved Pelargonium Mr. Lambert*, from Mr. Harman, Denham, near Uxbridge, much in the way of Duke of Edinburgh, but having more yellow in the variegation, the habit robust, and the variegation good. Two plain *Ivy-Leaved Pelargoniums* have received the same award; one, *Willsii rosea*, a capital hybrid variety raised by Mr. Wills, having finely-formed flowers of a pale bright rose hue, exhibited by Mr. J. W. Wimsett, Chelsea; and *Gem of the Season*, with flowers of a similar character in point of shape, but of a soft pinkish-salmon hue, from Mr. S. Ford, the Gardens, St. Leonard's Lodge, Horsham. The latter has remarkably variable leaves, some having the centre darker, some paler than the margin, and others almost golden. Both of these are unquestionable acquisitions. Then, of the ordinary zonal type, First-Class Certificates have been awarded to *Duchess of Abercorn*, rosy salmon, shaded with orange on the upper petals, large, circular, well-shaped flowers, and excellent habit; and to *Illuminator*, rich bright orange-scarlet, large, and very showy, both from Mr. Mann, of Brentwood, the raiser of Lord Derby; and a Second-Class Certificate to *Lord Stanley*, brilliant deep crimson, the flowers small, but smooth, and of fine shape, good trusser and habit, from Messrs. F. and A. Smith, Dulwich.

Of *Roses*, First-Class Certificates have been awarded to H. P. *Mons. Woolfield*, bright pink, suffused with rose in the centre of the flowers, which were large and full, a delicate and beautiful variety, from Mr. C. Turner, Slough; to Climbing Rose *Duchesse de Mecklenburgh*, with pale salmon-coloured flowers, from J. H. Arkwright, Esq., Hampton Court, Leicester; and to Pillar Rose *Prince Leopold*, with crimson flowers shaded with dark, brighter in the centre, from Mr. William Paul, Waltham Cross. Finally, a First-Class Certificate was awarded to Mr. C. Turner, for a *White Clove* named *The Bride*, having large and full white flowers tinged with cream, likely to be very valuable for cutting from.

There are now some really good things in the way of rose-coloured and lilac bedding *Lobelias*, for in addition to the useful little Beauty of Ravensbourne, and the somewhat taller-growing Rosy Gem, some useful varieties in the same way were produced at the meeting of the Floral Committee on July 6, by Mr. Appleby, gardener to Mrs. Harvey, Brixton Hill. To one of these, named *Mauve Queen*, a First-Class Certificate was awarded; it is a variety of good, though compact growth, producing plenty of bright lilac flowers. I put this variety, with others of what is termed the Tom Thumb type, in an intermediate position, between the ordinary L. speciosa type of growth and what is known as the pumila section. The latter are not continuous-blooming in some instances, and we have the testimony of Mr. Gibson that they will not as a general rule stand exposure to the sun.

Hybrid Nosegay *Pelargonium Harry George*, from Mr. J. George, of Putney, awarded a First-Class Certificate, marks a fine advance in this section. The flowers are of a bright deep rose hue, lit up with orange, the pips large, stout and round, and produced in noble trusses. For the exhibition stage, this variety appears well adapted. The Double Pelargoniums are continually receiving new additions, though one fails, except in rare instances, to notice the advance made. *Marie Lemoine*, *Victor Lemoine*, and *Wilhelm Pfitzer* are three kinds all lovers of these double kinds should cultivate; any advance on either of these must be something good. But when are we to see the promised double white variety? *Perpetual Picotee Prince of Orange*, from Mr. Perkins, Leamington, and awarded a First-Class Certificate, is a grand thing, either for conservatory and house decoration, or to cut from; it has flowers with a pale yellow ground, edged with bright red, large in size, full, and good.

I have just seen a grand new bedding *Tropæolum*; it is a seedling from that most useful variety, Carter's Crystal Palace Perfection, a sort that rarely seeds, but the raiser of the new kind managed to save enough seeds to give him three seedling plants; of these, two were altogether unlike the parent, and quite worthless, but the other is identical in every respect with the parent variety, excepting that the flowers are of a brilliant dark crimson. It is a true trailer, creeps close to the ground, wants no pegging-down, and it is characteristic of this type that it is wonderfully floriferous. R. D.

FRENCH *versus* ENGLISH FLOWER-GARDENING.

WE are in a likely way soon to be Cannaized, as well as Haussmannized, if the present rage for French gardening goes on. Already certain of our most respected old, and, as we considered, staunch gardeners of the old school, find something in it to make them look wise; but a little goes a long way with most people. I may be wrong, but if so, I am willing to be corrected, in expressing my opinion that any practical gardener will find more of French gardening in Battersea Park than in all the parks of Paris,—added to which, let me say, they will also find better taste, and an infinite amount of variety, which they would do well to imitate, by adding to the limited selection of plants at present in general use.

My object, however, in introducing this subject was to ask how are we to benefit from this? Already taste has come forward to rescue us from the too prevalent system of half-hardy nursery lines, and to show, by every sign, that the time is come to rout this out, as was formerly the case with old neglected herbaceous borders, which latter had through neglect become eye-sores, containing plants that never bloomed in consequence of bad usage, and spaces never filled in consequence of neglect, while bare places were left in the shrubberies to be made gay with a variety of weeds, which might have been most appropriately filled with some of the many free-growing handsome plants of this neglected class.

But are we to find the only remedy in these jacks-in-the-green? Have we not been putting in odd out-of-the-way corners our Roses, such helps as they are, too, to lighten up our shrubberies, and such ladies' pets that they are never out of place? Then there are our Sweet Peas, Hollyhocks, Foxgloves, Phloxes, Cloves, Pinks,—all more or less neglected. Even Mignonette can scarcely be accommodated with a spare corner, and Annuals are out of the question.

Is not a Hollyhock leaf as interesting as that of a Castor Oil plant? Is not a bunch of Sweet Peas as beautiful as a tuft of Cannas? Paris parks seem made up of everlasting Cannas, in masses that look as if they were grown as green crops for the cattle.

ANON.

MONTHLY CHRONICLE.

THE Gardeners' Examination of the Society of Arts was held in April last, when the following young gardeners were judged worthy to receive the various Certificates and Prizes offered, as stated in the following summaries:—

FLORICULTURE.

Society of Arts, 1st prize (£5) Royal Horticultural Society, 1st prize (£5)	MICHAEL MIDDLETON, aged 22, Richmond Parochial Library.
Society of Arts, 2nd prize (£3) Royal Horticultural Society, 2nd prize (£3)	RICHARD IRWIN LYNCH, aged 19, Richmond Parochial Library.

FRUIT AND VEGETABLE CULTURE.

Society of Arts, 1st prize (£5) Royal Horticultural Society, 1st prize (£5)	MICHAEL MIDDLETON, aged 22, Richmond Parochial Library.
Society of Arts, 2nd prize (£3) Royal Horticultural Society, 2nd prize (£3)	ALFRED BRADLEY, aged 26, Deptford Local Board.

The following candidates obtained Certificates of the 1st, 2nd, or 3rd class:—

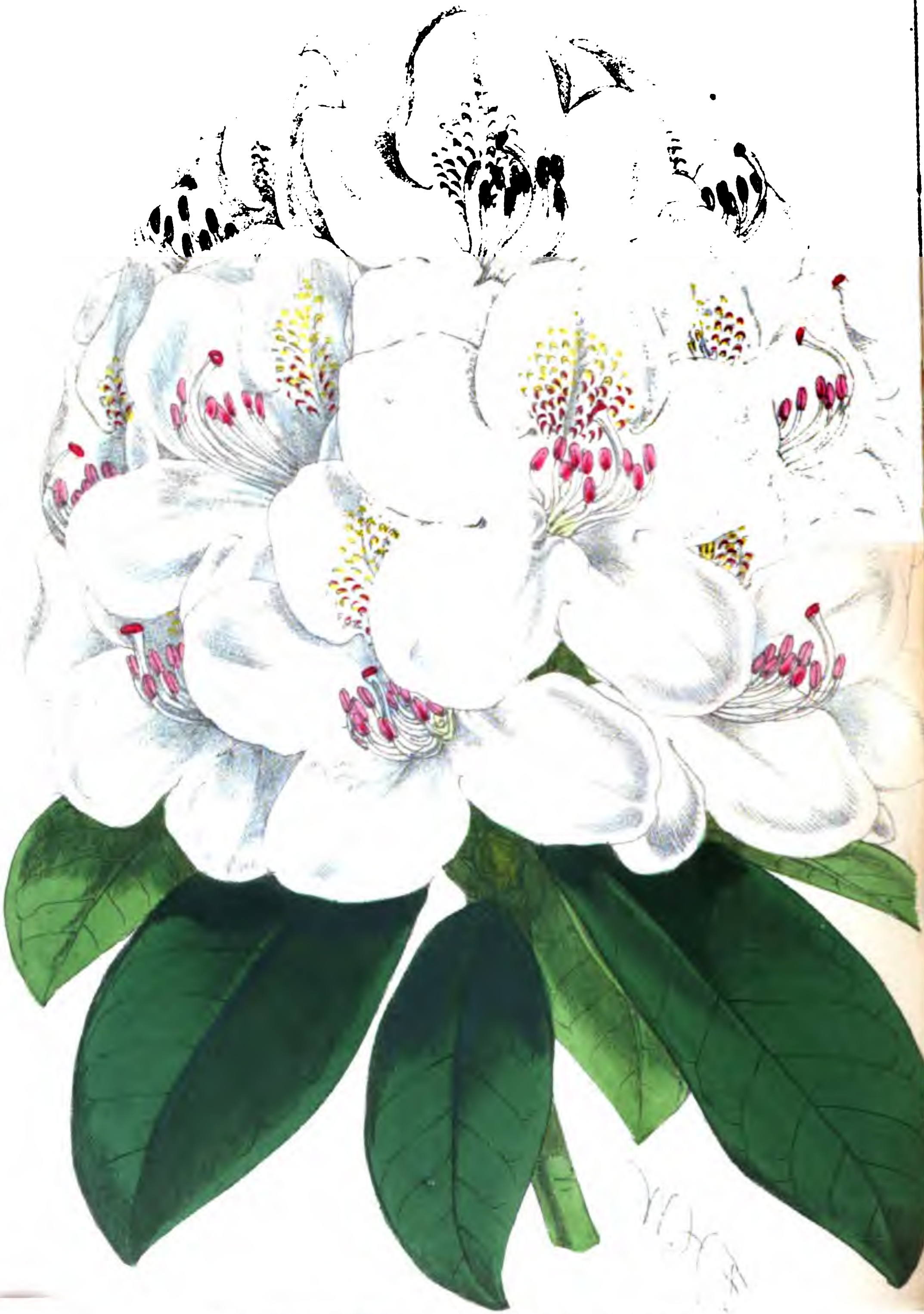
	FLORI-CULTURE.	FRUIT & VEGETBLE CULTURE.		FLORI-CULTURE.	FRUIT & VEGETBLE CULTURE.
A. BRADLEY, Deptford (26) ...	1	1	J. MACPHERSON, Sthampton (23)	—	3
B. CARGILL, Liverpool (27 ...	3	—	M. MIDDLETON, Richmond (22)...	1	1
C. FRYER, Lambeth (28) ...	3	—	W. NETTLETON, Huddersfield (31)	2	—
F. HARDISTY, Edinburgh (26) ...	2	2	W. PARKINSON, Liverpool (28)...	3	3
J. C. HIGGS, Southampton (23)...	2	—	W. RITCHIE, Edinburgh (22) ...	—	2
C. LAWTON, Hull (25)	1	2	J. SMITH, Richmond (27) ...	1	1
R. I. LYNCH, Richmond (19) ...	1	—	T. SMITH, Hull (18)	3	2

—— THERE is in the gardens of F. Pryor, Esq., of Digswell, Welwyn, under the able management of Mr. Earley, a Rose Hedge about 280 feet long. This hedge skirts one of the principal walks in the kitchen garden, and was originally a row of half-standards, of which the Crimson Boursault formed the mass; this row was afterwards trellised over with wire to the height of about 4 ft. 6 in., and 4 ft. in width at the bottom. Many of the original trees were then removed, and some of the best of the old and well-known sorts were planted in their places. They have all since been grown on what Mr. Earley calls the "extension system." Plenty of wood is left in, and this is tied to the trellis, and all vacant spaces are filled by budding. The whole of the row is now completely covered with growth, and has been literally loaded with blooms in all stages of development. The following varieties, which form the principal mass, seem to be admirably adapted for the purpose:—Charles Lawson, fine, and a very free bloomer; Lord Raglan, Yellow Persian; Comtesse de Chabrillant, first-rate; Blairii No. 2, beautiful flowers, very free; Gloire de Dijon, profusely bloomed; Jules Margottin, grand; Général Jacqueminot, Caroline de Sansal, Chénédolé, Anna Alexieff, all first-rate; the yellow and copper-coloured varieties of the Austrian Briar; and last, though not least, the Manetti, which gives relief and variety to its more showy rivals. That this method of cultivation is a very successful one there can be no doubt. As the trellising can be made to any height or width, the plan cannot be too strongly recommended for furnishing tall or dwarf edgings along the walks of either kitchen or flower gardens, or even to form back rows in ribbon borders.

—— THE beautiful Spiræa palmata, now being distributed by Mr. Noble, is found cultivated in almost every garden in the more northern parts of the Japanese empire, and is a most useful object when in bloom, being by far the handsomest of the species of the genus in cultivation; the deep purple-red of the stems and branches, passing into the crimson-purple of the glorious corymbs of flowers, contrasting most exquisitely with the foliage, which in autumn assumes beautiful tints of brown and golden-yellow. Like all the Japanese plants cultivated in, or indigenous to, the more northerly parts of the empire, S. palmata is perfectly hardy in England, and will form a valuable addition to our list of hardy herbaceous plants.

—— MR. FOWLER's estimate of a full crop of Grapes, such as a vine can bear for a series of years, is 25 lb. to the rod. At Castle Kennedy, in a house 35 ft. by 16 ft., and a length of rafter of about 22 ft., there are 10 rods with their complement of laterals which give 250 lb.; to that must be added, what is taken without injury, 25 lb. from each gable; giving, as nearly as possible, 300 lb. of grapes. In each of five houses the crop last year justified this estimate. Mr. Fowler says truly he could double it, but it would be at the expense of quality in the crop.

—— THE Apples called Stirling Castle and Small's Admirable bear a close resemblance. They are of the same dwarf habit, apparently of the Hawthornden race, and prone to bear when the trees are in a very young state, often bearing profusely on trees not more than 2 ft. in height, the second year after grafting, if on the English Paradise stock. There are, however, some differences. The fruit of the Stirling Castle is of the same shape, colour, and size as Small's Admirable, but has its eye set in a much deeper basin. The young shoots are spotted with white like those of the Admirable, but are lighter in colour; those of the latter being dark brown. The leaves of the Stirling Castle are nearly round, while those of Small's Admirable are comparatively long and pointed.



Rhododendron. Mrs John Clutton.

RHODODENDRON MRS. JOHN CLUTTON.

WITH AN ILLUSTRATION.

HARDY in constitution, evergreen in habit, and producing a gorgeous inflorescence, there are none among the evergreen shrubs introduced to our gardens which occupy so important a position, regarded from a decorative point of view, as the Rhododendron, of which we now give a choice illustration. It has won both name and fame in the annals of horticulture, and no more splendid floral picture can be found than that presented in early summer by the American garden—Rhododendrons being its leading feature.

The variety we now figure is considered by competent judges to be the best hardy white at present in cultivation. It has all the symmetry of truss, and smoothness of form and outline, that the most fastidious could desire; it is a remarkably free-bloomer; its flowers, from their thick and waxy texture, are, moreover, most enduring; and it comes in late, so that it is not often frost-bitten. The colour is white, just at first showing the slightest tint of blush, which passes off as the flowers become matured, when it stands out conspicuous by its purity —indeed, Purity itself, another excellent white variety, is quite surpassed by it in all essential points of merit,—truss, form, colour, and season. The pyramidal outline of the truss, with the flowers regularly disposed, each supporting its neighbour, is as near perfection as need be desired, while the smooth outline of the blossoms adds very greatly to its charms in the eyes of connoisseurs.

Rhododendron Mrs. John Clutton was raised from the variety named Album elegans, in the marvellous collection at the Knaphill Nursery, Woking, and we have to thank Mr. Anthony Waterer for the opportunity of recommending it to our readers. M.

ROSES IN POTS:

HOW TO PRODUCE THEM IN LONDON AND OTHER LARGE TOWNS.

I AM not fond of climbing high mountains, or cracking hard nuts, but the former, even when they seem inaccessible in the distance, are often found to yield most pleasurable exercise to the hardy pedestrian; and there are mechanical appliances for dealing with the latter, which at once save appearances, and leave us free from the risk of dental injury. Now, the art of growing Roses in large towns is to the many who only look on from the distance, as an "inaccessible mountain," which they would rather not attempt; and to those who know little of mechanical appliances, it appears as a "hard nut" which a too sensitive appreciation of the dental organs teaches them to reject.

Will my readers bear with me while I endeavour to show what I steadfastly believe, that Roses, however difficult of cultivation in London and other sooty towns, out-of-doors, may be grown with perfect success there UNDER GLASS.

Our town friends may remonstrate, "Well, but we have tried them, and they won't do." Yes; but how have you tried them? Probably you have bought small plants at 1s. or 1s. 6d. each, and placed them in a house with bedding plants, Camellias, and a host of other things whose conflicting interests rendered it impossible for the poor unfortunate roses to receive anything like reasonable treatment. It should be remembered that what is "one plant's meat is another plant's poison," and how would our growers of orchids, or stove and greenhouse plants succeed if they bought small plants, and if roses were cultivated in the same house with them, and a treatment followed with the view of reconciling such antagonistic interests? The growers of Orchids, &c., buy good-sized plants, have houses built expressly for them, or existing houses modified to suit them, and so it must be if the town gardener would succeed with Roses.

Well, then, what should the rose-house be? As to dimensions, these may vary according to the means or wants of the cultivator; but a span-roofed house, so constructed that the plants may be kept close to the glass, and a free circulation of air secured, is the best form of structure. Heating, although not absolutely necessary, is yet desirable, both as a protection against severe frost, and to secure the development of early flowers.

In the next place, BUY PLANTS WELL ADVANCED, plants that have passed their early and tender years in the nursery, under experienced and watchful care, and in a kindly atmosphere. Bear in mind that men will thrive on diet and under discipline that would be fatal to infants; and mature plants of roses will flourish, where young and tender plants would die.

Let us assume, then, that the cultivator has a suitable house and suitable plants, which he houses unpruned at the beginning of winter. His first act of cultivation is to prune them. If he wants the best of his flowers in March and April, he prunes in December, and applies gentle heat early in January. As the days lengthen, the heat may be gradually increased. In sunny weather the syringe should be used freely, especially in the morning. Watering must be regularly attended to, care being taken in the early stages of growth not to water too much; more water will be required, as the leaves increase in size. Smoking must be resorted to on the first appearance of green fly, and repeated often enough to keep the plants entirely free from these destructive visitants. Mildew must be guarded against. A small pepper-box, with finely punctured holes, should be kept at hand filled with sulphur, and this should be dusted freely on the leaves wherever the mildew is seen. A light shading should be provided, to be used as soon as the buds show colour. When the flowering is over, the plants should be rested by lowering the temperature of the house and by withholding water. In about a month growth will recommence with the advancing temperature of the year, when water must be again given, and the same routine of culture pursued; a second flowering will then take place in June, before the roses are in flower out of doors. When the second flowering is over, the plants may be plunged out of doors, and syringing frequently; an occasional flower will come forth, but it is desirable to rest them there till required for use again in December.

If no heat is applied to the house, less moisture should be used, and the first flowering will take place in May, the second in July and August.

The best season for repotting Roses is September. Shake a good portion of the soil away, using larger pots when required. There is no better soil for roses in pots than strong turfy loam and cow-dung, with sufficient drift sand to render it thoroughly porous.

I shall conclude this paper with a list of a few good sorts, which appear best suited to realize the objects in view:—

HYBRID PERPETUAL.
Anna Alexieff.
Beauty of Waltham.
Duchesse de Caylus.
Comtesse de Chabrillant.
Général d' Hautpoult.
Général Jacqueminot.
John Hopper.
Jules Margottin.
Elisabeth Vigneron.
Fisher Holmes.
Charles Lefebvre.
Alfred Colomb.
La France.
Lady Suffield.
Louis Peyronny.
Madame de Stella.
Madame Rivers.
Madame Victor Verdier.
Mdlle. Thérèse Levet.
Marie Baumann.
Maréchal Vaillant.
Monsieur Noman.
Pierre Notting.
Princess of Wales.
Prince Camille de Rohan.
Victor Verdier.

BOURBON PERPETUAL.
Comtesse de Barboutanne.

NOISETTE.
Céline Forestier.
Solfaterre.

TEA-SCENTED.
Ajax.
Archimède.
Gloire de Dijon.
Goubault.
Homer.
Climbing Devoniensis.
La Boule d'Or.
Madame Damaizin.
Madame Falcot.
Madame Maurin.
Madame Pauline Labonte.
Madame Villermoz.
Maréchal Niel.
Monsieur Furtado.
Marie Sisley.
Nina.
Nitida.
President.
Regulus.
Safrano.
Souvenir d'un Ami.
Vicomtesse de Cazes.
Zelia Pradel.

The above will be found a very good lot to begin with, and the newer and less certain kinds can be added at pleasure, as required.

Paul's Nurseries, Waltham Cross. WILLIAM PAUL.

BUDDING VINES.

WHEN at Trentham, a short time ago, my attention was directed to an experiment which Mr. Stevens had made in the budding of the Vine, which was highly interesting, and attended with the most satisfactory results. One of the large glass cases erected for the culture of the Vine, was planted in the June of 1868 with strong plants of Lady Downe's Seedling; they made vigorous growth, and were in September of the same year budded with well-ripened eyes of the Madresfield-Court Muscat, which remained dormant during the winter. The Vines were cut down to the inserted eyes, and in March, 1869, gradually started into growth. The buds burst vigorously, and showed from three to four bunches on each shoot; all, however, were removed, with the exception of one bunch to each Vine, and these are swelling off surprisingly, and promise to make bunches of from 2 lb. to 3 lb. weight. The growth of the Vines is healthy and robust, promising well for future results. Mr. Stevens called my attention to the necessity of allowing the bandages used for holding the buds in place to remain until growth had well set in, as by removing the ties too soon, there would be a liability of the buds being displaced by the pressure of the sap. It is evident that a judicious discrimination must be exercised as to the most fitting time for budding, both as regards the proper condition of the Vine, and of the bud; and this condition, as it appears to me, occurs in autumn, when the active growth of the Vine is subsiding, but is still so far active as to insure a vital union. It is also important to select the best matured buds.

To Mr. Stevens we are indebted for putting the budding of Vines to this practical test, and developing in its favour an unquestionable result. To say that there is novelty in the experiment would be absurd, for there is nothing new under the sun*, but I believe I shall be correct in averring that hitherto all attempts at budding the Vine have failed to produce encouraging results. I should perhaps add, that the buds were inserted in the older portions of the stems, at about a foot from the ground, so that the buds will do equally well on the old wood as on the young.

Witley Court. GEORGE WESTLAND.

RENDLE'S PATENT PLANT PROTECTORS.

IN our volume for 1868, we noticed the original form of these Protectors, as containing, in our opinion, the germ of a useful invention. One of their great merits was cheapness, the materials being nothing more than red earthenware tiles, and panes of orchard-house glass. The original form was semicircular, but instead of these somewhat cumbrous articles, Mr. Rendle now gives us, what is no doubt a very great improvement, namely, hollow bricks, which may be set up in any way, and with the panes of glass laid across from brick to brick, furnish a convenient and complete mode of sheltering plants, adapted for general use. The peculiar features of these improved protectors will be best understood from the accompanying figures, which Mr. Rendle has placed at our disposal.

We have said that cheapness was one chief recommendation of these plant protectors, and so it is, for they consist simply of grooved hollow bricks, into the upper edge of which squares of orchard-house glass are introduced. These panes of glass are not fixed, but slide along with the greatest facility, so that ventilation may be regulated easily; no paint or putty is required, and broken glass can be replaced without difficulty by an ordinary labourer. The cost is less than that of ordinary hand-glasses. Undoubtedly the protectors afford facilities to persons of limited means to produce most kinds of flowers, plants, and fruits early, and to a degree of perfection which has hitherto been only possible to those who enjoy comparatively extensive means and appliances.

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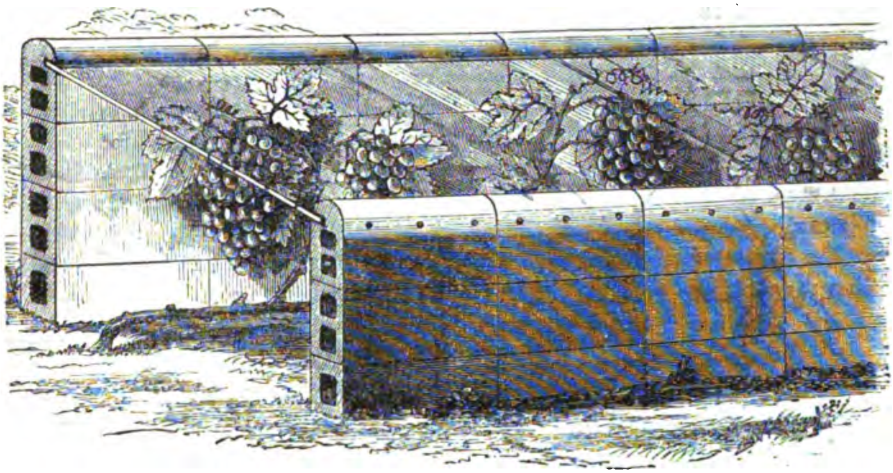
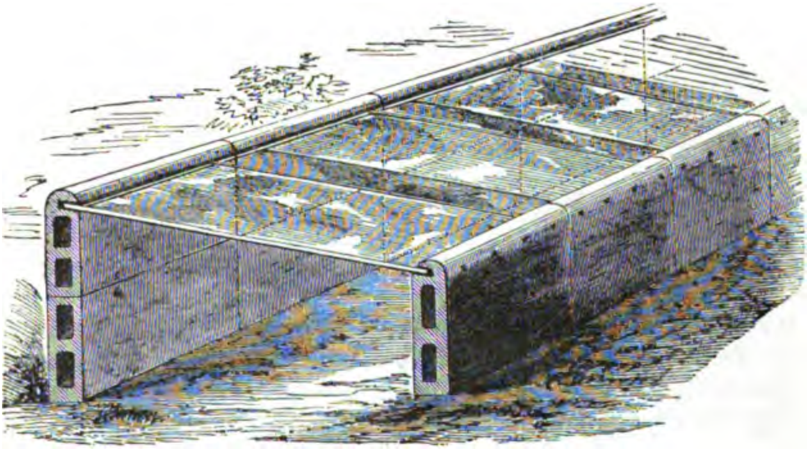
* Mr. Fleming, formerly of Trentham, strongly recommended the spring budding of Vines in the *Gardeners' Magazine of Botany* for 1851 (p. 6). The time suggested was when the leaves were commencing to unfold.—ED.

The many ways in which these Protectors might be turned to account will at once suggest themselves, and, in fact, they are made various in size, so as to be adapted to various uses. One adaptation is that of the ground vinery, which Mr. Rendle tells us he can sell in quantities of 1,000 feet, at about 1s. per foot, including glass. This is shown in the annexed figure. In the same way, by adopting protectors of convenient size, strawberries, salading, peas, and indeed all kitchen-garden crops requiring shelter, can be grown, or if necessary when grown, protected from cold. They are equally adapted for flowers, or for raising seedlings or cuttings, and they may be used either on the ground surface or partially sunk, either close at the sides, or with a brick left out at intervals—pigeon-holed—to secure more abundant ventilation.





In our previous notice we gave an illustration showing how the tiles could be applied to the growth of wall trees. In this respect, too, an improvement has been effected. Projecting tiles, having both surfaces grooved, are built into the walls at intervals of 18 in. (6 bricks), the groove on the upper side being further from the wall than that on the under side. Along these grooves panes of glass are slid in, so that the face of the glass is made slightly sloping, and thus the branches of the trees, trained along each space, be they those of peach, or vine, or any other plant, are placed in almost as good a position as regards protection as they would be in a glazed house. The chief drawback here is diminished light, from the opaque projections, but this the inventor will doubtless find means to remedy.

For amateurs such aids as these must be especially useful, and we expect to see them very extensively adopted by this class of cultivators. M.

ALTERNANTHERAS.

THERE can be no doubt that the best kinds of Alternantheras will ultimately become very popular as dwarf edging or bedding plants. A. amabilis and A. sessilis amœna are so far the best. Many persons have from time to time complained that they were difficult to manage in winter, and that this would prevent their coming generally into use. This, however, is a mistake. No plant can be more easy to manage if struck early, and allowed to get a little pot-bound. They can then be wintered in any medium house or pit, and a very few cuttings in spring will be found sufficient to make any amount of stock. About six days is the average period at which the cuttings begin to root, and in ten days another crop of cuttings may be got from them, and so on, up to planting-out time, which should not be early. J. F.

SEASONABLE HINTS FOR AMATEURS.—SEPTEMBER.

NO time should now be lost in getting in a good stock of cuttings of all kinds of Bedding plants for next season. Owing to the hot dry weather which prevailed through July, good-sized cuttings of some things have been somewhat difficult to get, but now that they are obtainable, no time should be lost in getting them in. Hardy annuals sown now in pots and kept in frames during the winter, will flower early and well next spring. Carnations and Picotees may still be layered. Dahlias and other tall-growing plants should be kept well tied up, otherwise they may get very much damaged by the stormy winds which so generally prevail in the latter part of this month. The flower-beds should be looked over daily, and all decayed leaves should be removed; and if seeds are not wanted, all decaying flowers should be picked off.

Preparations should be made for the protection of all tender plants out of doors. If the weather should continue mild, and it is not wanted, so much the better; but it is well to be always prepared, as stormy, boisterous weather sometimes comes on very suddenly in the latter part of this month, and a quantity of valuable plants may soon be seriously damaged for want of a temporary protection. As they are more likely to suffer from wind and rain than from frost, any temporary protection in a sheltered corner will answer very well for some weeks. Any amateur can, with a few stakes, laths, and tarpaulin, soon contrive a suitable place. If ripe grapes are hanging in the greenhouses, the plants should be kept out as long as they can be with safety. Pelargoniums for autumn blooming, that have been grown out of doors, should towards the end of the month be placed under glass; they should have plenty of air, and not be kept too wet; if they have been well grown, they will furnish a fine display for many weeks. As the nights begin to lengthen, the heavy dews that prevail will render watering in the open air less necessary; still, all plants, and particularly hard-wooded plants, must be looked over, to see that they do not suffer for want of water. As long as the weather continues mild, all the more hardy hard-wooded plants will do best in the open air, the heavy dews being beneficial to them.

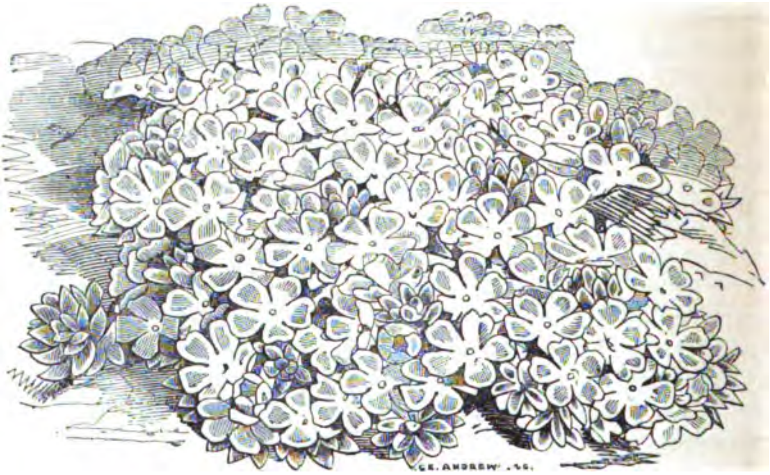
With the exception of some of the summer Peas, which the hot weather brought in nearly all at once, most kinds of vegetables have done well this season in the kitchen garden. It is now time to take up and store all the early Potatos, which should be done in dry weather. Onions should also now be taken up, dried carefully, and stored; they keep best when "strapped," and hung up in a dry, cool, airy shed or outhouse. Cabbages for next spring should be planted out not later than the middle of the month, so that they may get well rooted before the short, cold days set in. Bath Cos, Brown Dutch, and Hammersmith Hardy Lettuces should be planted in quantities two or three times during the month, on warm, sheltered borders, for autumn, winter, and spring use. The earthing-up of Celery in dry weather must be regularly attended to. Late Turnips should be thinned and hoed. Peas, Beans, and all other crops past bearing should be cleared off at once, and the ground dug and cropped. Every advantage should be taken of dry weather to destroy weeds, which will now grow rapidly, if not kept well under.

In the Fruit Garden the gathering of all kinds of fruit as they ripen will now require daily attention. When gathered, fruit should be handled as little as possible. Fine fruit is oftentimes much damaged by careless handling. All stone fruit, as also Pears and Apples, are improved in flavour by being laid on a shelf in a dry, warm place for a few days. Apricots are very large and fine this year, and the trees look well and promise well for a crop next year. Plums are a thin crop, but are very fine, and are rather late in ripening. Peaches are abundant and fine here, and will be ripe by the first of the month on the open wall. Pears are plentiful and fine everywhere. Apples are in general thin, and will be small this season. Nuts are very abundant; I don't remember ever seeing the bushes so heavily laden. All runners and all the old outside leaves should be cut clean off the Strawberry plants, if not already done, and fresh plantations may still be made. I would advise Amateurs, who wish to prolong the Strawberry season, and have fruit as late as possible, to plant the old Elton Pine. I have grown it for the last twenty years, and during that time I have either grown, or seen grown, all the late kinds that have come out; but I have seen not one to equal it as an abundant and late bearer. It is a very hardy variety, an immense cropper, and continues later in bearing than any kind I know. I have exhibited it annually for some years at some of the late autumn shows in this neighbourhood, and it has mostly taken the prize. It has always been admired, and I have sometimes heard more surprise expressed at a dish of these Strawberries than at all the other fruit in the show. I have sometimes shown it well in September, and I have had it fine occasionally in October. The flavour is very acid, which, perhaps, is the principal reason why it is not more generally grown; but the fruit is always highly coloured, and is excellent for preserving.

Stourton. M. SAUL.

ANDROSACE PUBESCENS.

THE Androsaces are dwarf tufted-growing herbaceous plants, often of great beauty, as is the case with our present subject, for the figure of which we are indebted to the Messrs. Backhouse and Son, of York, who, it is well known, pay especial attention to the culture and dissemination of these and similar Alpine gems.


C. E. ANDREW. SC.

Androsace pubescens is of this tufted habit, producing short crowded erect stems, covered with imbricating bluntly spathulate leaves, which are ciliated and more or less pubescent with stalked stellate hairs. The flowers, which are produced in spring, are just elevated above the foliage, and are pure white, with a yellow eye, or sometimes slightly tinted with pink. It was gathered by Messrs. Backhouse's collector, "on the dolomites of the Central Tyrolese Alps, and grows freely on well-drained but rather humid rockwork, rooting deeply into fissures and crevices, and preferring rather sunny situations." All such choice Alpine plants need a pure atmosphere.

M.

THE WHITE CALVILLE APPLE.

I AM sorry to have ruffled the temper of "C. B. S." by the few remarks I made on this Apple in the FLORIST AND POMOLOGIST (p. 106). On referring to my short article again, I really can see nothing in it which should be particularly galling to "C. B. S.," or which conflicts with his opinions about the merits or demerits of this fruit. I have grown the White Calville Apple for more than twenty years, both on the walls and on borders, and on all the common stocks, so that my acquaintance with it is not so recent as "C. B. S." supposes. Last year I had a lot of it imported from France on the French Paradise stock, as cordons, and pot plants. I have, therefore, some grounds for giving it a good character, as these little bushes bore well, and I had good specimens of it for the dessert in April and May.

As I never advance any strong opinions about this or any other kind of fruit without putting them to the test of submitting them to experienced judges, I offer to show six specimens of this Apple at one of the Horticultural Society's fruit committee meetings in April or May next year, and challenge "C. B. S." to produce six of any of his favourite late apples, for the committee to compare with them as to soundness and flavour. Perhaps "C. B. S." may think this throwing-down of the glove another "singularly ridiculous evidence of the times," but it is my custom to do so in all cases of disputed opinion in fruit cultivation. Surely "C. B. S.," from his "tight little island" of Jersey, with its favourable soil and temperature, will be enabled to show something in the Apple line, able to compete with my White Calvilles, grown in a midland district in England. Another condition would be highly prized by me, namely, that he should give his name and address, for I am certain we should soon be good friends, as all Pomologists should be, and must be, when in search after truth in fruit-growing.

Welbeck. WILLIAM TILLERY.

ON THE CULTIVATION OF OSMUNDAS.

BRITISH Ferns in the open air, that is, in the hardy fernery, have long been favourites, and many persons have devoted a spare corner and some attention to their cultivation, though in most instances it has been with but moderate success. Lastreas, Polystichums, Athyriums, and some others are generally managed tolerably well; but the same cannot be said of other genera, several of which will not grow satisfactorily without special treatment. My object is to give an account of the plan I have adopted in cultivating the Osmundas and other analogous ferns, a group of which I know many cultivators have failed to obtain fine healthy well-grown specimens.

About ten years ago my employers requested me to make a hardy fernery, and after looking about for some time for a suitable spot, it was decided to convert an old chalk-pit to this purpose. In forming the collection, it was my desire to obtain all the normal, with the best of the abnormal forms of British Ferns, and particularly the British and hardy Exotic Osmundas, with Struthiopteris and others of a similar kind.

The ferns were all planted out at the same time, and had an average amount of care bestowed upon them; but, to my great annoyance, the Osmunda and other ferns of that class did not grow satisfactorily. They were tried for three or four seasons with no better results. Liberal waterings did not seem to avail much, the water passing off almost immediately, owing to excessive drainage, and the great absorption by the roots of the surrounding trees, so that the plants soon became dry, and looked badly. By means of these failures, however, I ultimately arrived at the method of growing them, which I now proceed to lay before the readers of the FLORIST AND POMOLOGIST, for the benefit of those who may have encountered similar difficulties, and who may wish to obviate them.

A piece of ground, of irregular shape, large enough to contain about twenty plants, was staked out, and the mould, or more correctly speaking, the chalk, was removed to the depth of three feet; a bricklayer followed, and put in a floor of three bricks laid on the flat, set in good Portland cement, and over that a layer of plain tiles, the sides being made up to the ground level with a 4½-in. wall, well built up in the same kind of cement; this made the whole watertight, and prevented the roots of the surrounding trees from penetrating and robbing the ferns of their moisture. The space was filled up with earth, compounded of good loam, peat, and leaf-mould, in equal proportions, with about one-fifth of good rotten dung added thereto; these ingredients were thoroughly mixed and well trodden in, and then the ferns were planted. In forming this bed, provision was made for the escape of the surplus water, by introducing into the front wall, at about 4 in. from the bottom, a common 3-in. drain-pipe, which communicated with a small tank, about 3 ft. square, sunk into the chalk, so that all waste water became absorbed.

This method proved to be eminently successful, the plants far surpassing in size any I have ever seen under artificial cultivation, and, judging from report, rivalling their growth in their natural habits. Last season I could boast of Osmunda regalis with fronds at least 8 ft. in length, Osmunda spectabilis 4½ ft., Osmunda Claytoniana 5 ft., Osmunda cinnamomea 3 ft., and the beautiful Osmunda regalis, var. cristata, 3 ft. in length. Adiantum pedatum grew from 2 ft. to 3 ft. in height, and others were proportionately fine. The plants were not drawn up by being planted closely together, but were placed at a fair distance apart, and became handsome and noble specimens. Every spring I apply a dressing of about two inches of rotten dung to the surface, and just cover it with mould for the sake of appearance. This artificial swamp is the admiration of all the visitors here. The plants are always in a healthy and vigorous state, and have none of that half-starved appearance so frequently to be seen.

The result of my experience induces me to believe that a more liberal treatment would not be found objectionable in the cultivation of many more of our native ferns. I intend making the experiment this season, and may possibly find time to make known in this journal what amount of success I may meet with.

In concluding my remarks upon what I may term "growing Osmundas under difficulties," I would observe that the points to be principally attended to are (1) a deep water-tight and root-tight tank, the depth of which may, with advantage, be more than in the case I have described; (2) a rich nutritious soil; (3) a reasonable amount of water; and (4) a drain to carry off the surplus.

Danesbury. A. PARSONS.

GRAPE CULTURE: CALCAREOUS SOIL.

IN an ably-written paper which has been published in contemporary periodicals, referring to the kind of soil best suited to the production of Grapes, the author, Mr. Cramb, leads up to the conclusion that calcareous soils are inimical to the production of good Grapes. As I believe that one of the objects of the Royal Horticultural Society in inviting these "congress" papers, was to excite discussion upon them, so that different opinions might be gathered, I make no apology for stating, in reference to Mr. Cramb's deduction, that my experience and observation would not lead me to the same conclusion, since I have for many years been under the impression that a certain portion of calcareous soil in the compost of which vine borders are formed is a very necessary component, and highly conducive to the production of fine well-coloured fruit.

Some years ago, I came into the care of a vinery, which had for some time been in a very unsatisfactory state. On examining the border, I found it to be in a close, compact, and sour condition, more like a heap of manure that had lain for some years and had run together, than a porous, warm vine border, according to my ideas of what such a border should be. The vine is naturally a rock-loving plant, and is not very well adapted to grow in mud, however rich it may be. I therefore had the soil removed to the depth of nearly three feet, and a capital surface dressing it made for the kitchen garden adjacent. I found only a few main roots, and very few fibres, except about the foundation-walls, to which they were clinging pretty extensively, these, I suspect, having been the chief source of nourishment to the vines. Whatever roots I could find above the drainage were raised, and the border was again filled with loam taken from the surface of a common, the substratum of which was pure chalk; it was cut about six inches thick, and having been chopped, but very coarsely so, it was thrown in grass and all, just as it came from the common. A few bones were scattered in during the process, and also some charcoal, and about an eighth part of half-rotten stable manure, and the border was covered with the same material, when all was filled up. Now, the staple of this border was a calcareous loam. From the following season the vines steadily improved, and a few years later fruit from them took a high position among the prizeholders at the Royal Botanic Gardens. So thoroughly do I believe this to have, in great measure, resulted from the use of calcareous matter, that I should never think of making a new vine border without adding a good quantity of old mortar rubbish to supply the calcareous ingredient, unless I was so situated as to be able to get a good strong loam from a chalky subsoil, in which case other stimulants of a different nature would only be necessary.

I have noticed, in other instances, where vine borders had become worn out, or soured through inefficient drainage, that the roots of the vines appear to have derived their principal support from the mortar and brickwork of the foundations; this would not lead one to suppose that calcareous matter was injurious to them, but rather the contrary, unless, indeed, it was looked upon in the light of Hobson's choice. Be that as it may, I believe that as good grapes may be grown where calcareous matter forms a portion of the border, as where it is entirely wanting. I have for some years had several opportunities of watching the progress of a good many vineries situated on the chalk formation in the neighbourhood of Brighton, and certainly I would not wish for grapes of a better quality and colour than are grown there. The wood also is short-jointed, stocky, and fruitful, and the bunches compact and well-filled,—not over large, certainly, but that is no drawback for general use, since the same weight is produced as when the bunches are fewer and larger. I have always been under the impression that, in this case, the chalk formation was the principal element of success, and with the results I have seen, I must still regard it as a very good "base of operations" to start from.

If I remember aright, when the Golden Hamburgh Grape was first sent out, a prize of £5 was offered the next year for the best fruit, and it was gained by an eminent grower at Brighton, whose vineries are on a chalk foundation, so that I have no doubt that calcareous matter must have entered largely into the composition of the borders.

Redleaf. JOHN COX.

EXPERIMENTS IN POTATO CULTURE.

IN the following memoranda I have noted the results of two years' culture of eleven kinds of Potatos, of sorts suitable for early produce, grown here, a single row of each, 60 ft. long, having been planted in an open quarter in the kitchen garden :—

1. **MYATT'S PROLIFIC.**—Very large, with smooth skin, and scarcely any eyes. This variety I find the best for forcing, and for the first crop in the open air, being very prolific, as its name implies. Crop: 3½ pecks to the row.

2. **Minhin's Early Reliance.**—A very fine variety, and very productive. 3½ pecks to the row.

3. **Royal Ash Leaf** (Rivers').—Very large and fine, but not so many tubers to a root as in No. 1. From 2 to 3 pecks to the row.

4. **Mona's Pride.**—A very useful kind, and a good cropper. 3 pecks to the row.

5. **King of Potatos.**—A very fine second-early kidney, and a true model of what a kidney potato should be as regards shape; large, a heavy cropper, and free from eyes. It is a seedling, I believe, either from the Lapstone or Fluke, which it resembles in shape, but it is earlier. 3½ pecks to the row.

6. **Milky White.**—A very fine large second-early kidney, truly named "milky white," as it will be seen when cooked to merit all that has been said in its praise; it is very mealy, and of a very fine flavour. The produce of this variety I have no doubt would have been larger if better sets had been used, but the seed was not larger than pigeons' eggs, and I have had only one year's trial with it. 3½ pecks to the row.

7. **Transell's Seedling.**—A round potato, with very small eyes, very early, and having a beautiful smooth skin; of very fine flavour when cooked. The best round potato for forcing that I have ever grown, and excellent either under glass or in the open air. 3 pecks to the row.

8. **Early Frame.**—A very fine round early potato. 3 pecks to the row.

9. **Early Don.**—A very useful kind, and a great cropper; very distinct from Nos. 7 and 8, by its being marked with purple round the eyes. It is a larger cropper than either of the two preceding varieties, but does not possess their other good qualities; of medium size. 5 pecks to the row.

10. **Daintree's Seedling.**—A second-early round potato, very productive, but of medium size. 4 pecks to the row.

11. **Early Oxford** (Soden's).—A very useful second-early round potato. Twenty years ago this variety was the earliest round potato grown; but Nos. 7 and 8 are much earlier. 2½ pecks to the row.

It will, I trust, interest some of your numerous readers to know that there has not been one diseased potato found in these gardens this year, up to the 14th of August. In 1868 I grew the same varieties as this year, except Milky White, and with better results, as we were then taking them up quite ripe in July, and the produce from each kind was from four to five pecks to the row, 60 ft. long. This year they were cut off by frost about the end of April, and consequently they did not afterwards acquire the same degree of vigour they had in 1868.

Elsenham Hall Gardens. William Plester.

ROSE HEDGES.

YOU mention at p. 192 a hedge of Roses. The success of Mr. Earley and your notice thereof, may do something towards making popular a most useful addition to many parts of a garden. Many persons, for reasons which are scarcely intelligible, object to see growing vegetables in a garden. Hence for many years I have been compelled to introduce something to shut them out from view, and I have found that roses make the best and the most pleasing of all screens. We have also found the old Noisette Fellenberg by far the best sort to use. It must have a good deal of the monthly or Red China blood in the cross, as it is continually in bloom, and it may be had ten feet high on common hazel stakes—though, of course, stakes of iron are better. If a white hedge rose is wanted, Aimée Vibert is, in good soil, according to my experience, much the best of that colour; it is clear in colour, free in growth, and an abundant bloomer. Both these do well for cutting. We have never succeeded with hybrids, but that is no proof that they will not do well elsewhere. Neither the Austrian brier nor the Scotch rose is of any use, in my opinion, for they remain so short a time in bloom.

To yield variety, the following plan may be adopted:—Place stakes 10 ft. high and 10 ft. apart along the back of a kitchen-garden border, which may be of any convenient width. From the 10-ft. stakes drop down with rustic trellis or pea stakes to 5 ft. in the centre, making a festoon. Plant to each stake a Hollyhock, and introduce between different colours of Sweet Peas and the Canary-flower mixed, or Convolvulus major, or any one of the endless host of beautiful facing-up plants. Against the 10-ft. stakes in certain borders here we have introduced standard pears and apples, to be kept like orange trees. Gourds do extremely well for situations of this kind, and in the case of the heavy-fruited ones, a little bench fixed in front serves to show off the fruit. F.

THE GENUS DARWINIA *alias* GENETYLLIS.

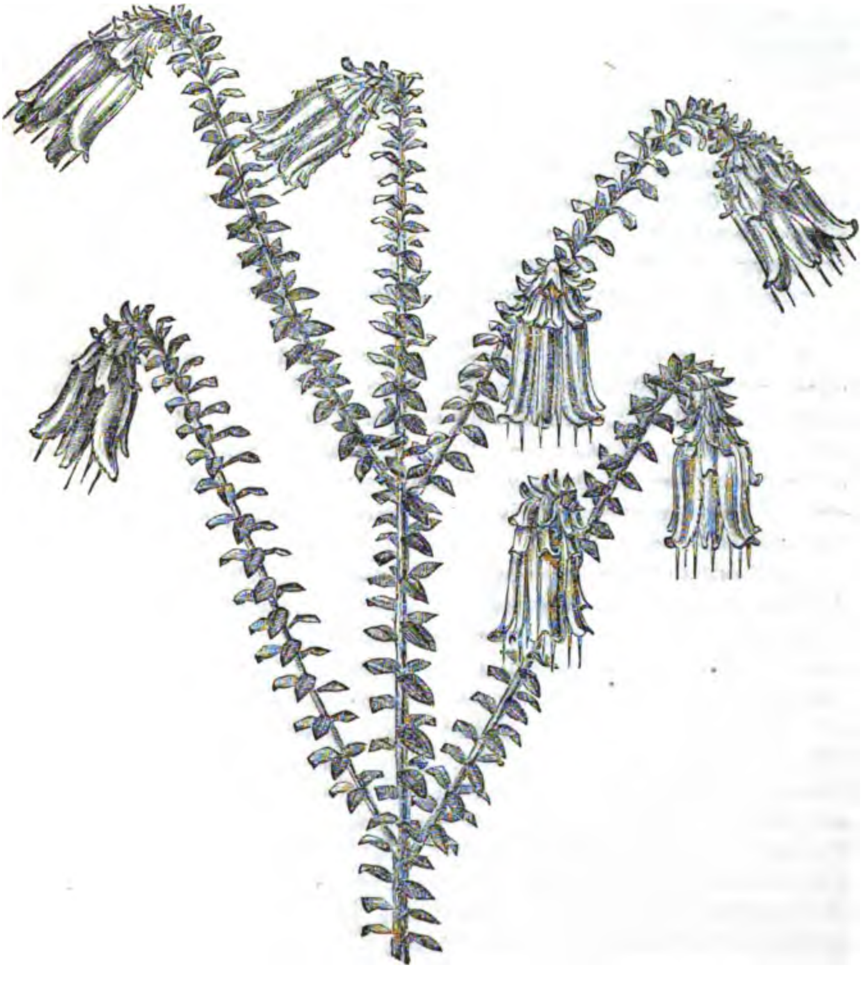
FEW subjects of greater interest are met with at our great exhibitions of plants than the species of *Darwinia*, better known to horticulturists under the respective names of *Genetyllis* and *Hedaroma*. They are evergreens requiring only the shelter of a greenhouse, and their compact bushy habit, and the singular attractiveness of their inflorescence, render them well adapted for being grown into specimen plants. During the present season, D. macrostegia has been shown by most cultivators in a state of unwonted beauty, its bright and well-marked colouring being doubtless the result of the thorough ripening of the young growth by the intense heat and light of the summer of 1868.

The inflorescence of these plants is peculiar, and consists not, as at first sight appears, of a drooping bell-shaped corolla, but of a coloured involucre, enclosing a head of small and not very conspicuous flowers. The following are the modern names of the species at present introduced, with their garden synonyms. They all belong to that division of the section Hedaroma, which is characterized by a large coloured involucre, and they are all West Australian:—

DARWINIA MACROSTEGIA. This is the Genetyllis tulipifera and the Hedaroma tulipiferum of gardens, and the true Genetyllis macrostegia of Turczaninow. It is the most beautiful of the three garden species, and is known by its entire leaves of an elliptic-oblong outline, and also its entire bracts of an obovate form. These are of a creamy-white colour, freely blotched with crimson, which is very intense in well-grown plants. The involucres are larger than in the two following species. There is a coloured figure in the *Botanical Magazine*, t. 4858.

DARWINIA HOOKERIANA. This is the garden Genetyllis macrostegia and G. Hookeriana. It is somewhat more slender and less twiggy than the former, but like it, has entire leaves and bracts, the former being linear-oblong, and the latter broadly oblong. The involucral bracts are of a uniform orange-red colour. There is a coloured figure in the *Botanical Magazine*, t. 4860.

DARWINIA FIMBRIATA. This is the Genetyllis fimbriata, recently introduced by Messrs. Veitch and Sons, and is represented by the annexed woodcut. It is a dense-growing plant, distinguished at once from the two preceding by having both its oblong-elliptic leaves and its oblong-cuneate involucral bracts ciliated at the edge. The involucres in this species are of a pale uniform pink. There is a coloured figure in the *Botanical Magazine*, t. 5468. M.



COUPLING LINKS BETWEEN PANELLED WALLS AND FLOWER BEDS.

IT is generally a difficult, it often seems an impossible, art gradually to let down Architecture among Floritecture,—to coin a word. Some do it suddenly, with a rush. They make no attempt at a gradual bringing together of these very distinct forms of beauty. They boldly run up flat masses of flowers. or fat lumpy shrubberies, to chaste architectural lines, and leave them there as evidence of their want of the organ of congruity or fitness. Others strain at effect, by placing the statuesque and picturesque in the most violent contrast. Common bracken, furze, or a thicket of wood, nestle around the outer base of some of our highly artistic garden walls. But the contrast is too violent to be agreeable. On the outer boundary line such a sharp division between nature and art may be permitted; but, as between different portions of the pleasure-ground, or interposed between the main walks and the flower garden, as such screens sometimes are, they have an overstrained effect, offensive to refined taste, and incompatible with true art.

We are rich in subjects that will harmonize, and as it were form stepping-stones between architecture and floritecture. Hollyhocks among herbaceous plants, and all kinds of spiral-headed trees, will harmonize with every form of architectural line, and bridge over the entire distance between walls or houses and groups of trees or shrubs, or mere flat masses of flowers, with the utmost ease. By securing easy gradations, the forms melt, as it were, from the one point into the other.

I will venture to give an example of this mode of planting, which has been a good deal admired. It has at least the merit of cheapness and simplicity, and of being readily adapted or fitted into almost any position. The wall in question constitutes the boundary of a terrace walk, over a hundred yards long and fourteen feet wide. On the other side is a ribbon border running the entire length, and backing up against a portion of the chief range of glass. The wall is 18 in. thick, 3½ ft. high, and set off with pillars 2 ft. square, at distances of 20 ft. apart. At each end of the terrace the piers are run up on each side to a height of 13 ft., and surmounted by handsome unplanted vases. The centre space across the ends is filled in with a chaste pattern of blue and gold iron-work, pierced through at each end with gates to match. Half-way in this length the wall is likewise pierced by a pair of gates of the same pattern, but only of the height of the wall. These lead into or across the centre of a large ornamental flower garden, with a handsome stone fountain as the attraction in a line with the gates. The pillars of the wall are each furnished with rather flat-formed vases, filled with scarlet Pelargoniums. The flower garden stretches away about forty yards from this wall; then follows a lofty double arch of roses, and at a higher elevation, a second terrace walk, over 300 yards long and 13 ft. wide, furnished with handsome stone seats at both ends. The arches run down the ends of the garden in single file, and also run across the centre, and round the fountain. The flower beds are large, and nearly flat, requiring from 500 to 1,000 plants apiece. The massiveness of the wall seemed to lie like a dead weight upon such broad sheets of colouring, and the problem was to adopt some expedient to lighten the wall and the garden at the same time, as well as to link the two together, or enable them to meet in congruous harmony. The puzzle seemed to be how to bring the wall down to the garden, or the garden up to the wall, without a painful hitch between them. The difficulty was increased in this instance, as the wall itself was too squat for its thickness. I therefore began, as it were, by virtually raising the wall. Its heavy line of coping and vases was cut into elegant shreds by running up spiral forms to a height of 10 ft. or 12 ft. within a few feet of its base. This had a magical influence upon the wall, uplifting as it were a huge load from its mighty back. But having thus, as it were, trebled the height of the wall with a line of spiral trees, the next step was to lower it gracefully into the flower-beds. This was done by the use of other trees and flowers in the following manner :—The first trees were planted at a distance of 4½ ft. from the wall in the centre of every panel, an upright cypress and a rose being used alternately. The winter of '59-'60 destroyed most of the cypresses, and they were at once replaced with common yews cut into shape. These have done so well, that already they measure about 4 ft. across, and average from 10 ft. to 14 ft. in height—dense masses of sombre beauty. The roses have reached nearly to the same height. Opposite each rose tree, at a distance of 15 ft. from the wall, an Irish yew of slender build, and from 4 ft. to 6 ft. in height, is placed. Then follows a grass walk 14 ft. wide, and on the opposite side, with their feet in the flowers, a row of golden Irish yews nod across the ample sward at their green brothers. The garden is pierced lengthways by a green division of similar width, and this is lined on each side with a row of stately sentinels of Irish yew, of from 10 ft. to 14 ft. in height, which gave a sort of architectural character to the whole, in harmony with the water, the fountain, massive stone walls, and the mansion within sight, and cut asunder the rose arch in every conceivable and inconceivable way, with striking and novel effects.

Returning to the wall, the large trees are planted near the outside of a series of semicircular spaces of 4½ ft. radius, and nearly 10 ft. long. On each of these spaces, between the trees and the wall, five strong choice double Hollyhocks are planted. By dint of constant manuring, in a solid and liquid form, these grow strongly and flower profusely, and, of course, impart the idea of an unbroken row of beauty from either end. They are likewise effective from any point, and leave the pillars and vases quite free to display their charms between them. In the corner space, formed by the pyramidal trees and the line of Hollyhocks, a single plant on each side, of Fuchsia, Heliotrope, or Pelargonium, has generally been placed, and a few seeds of Mignonette thrown in for perfume, have covered the ground, and finished the semicircles—no, not yet, for they are all edged with a broad band of the Cerastium, and nothing could prove more airy and charming than this 'snow in summer,' enwreathing the bottoms of sombre yews, or climbing up among tender masses of green rose leaves, or making the flowers blush a deeper crimson, as it twines its tiny arms around them in a close embrace. The snowy white projections are now linked together by a narrow band of Viola cornuta, carried along the base of the wall to the pillars, while opposite the latter, the two ends of the Violets are tied together in a true lovers' knot, with a projecting bow of the Golden Feather. And thus the bottom of the wall is fringed with beauty.

There is also another form of embellishment introduced between the two lines of trees. At a distance of 11 ft. from the wall, opposite every vase-capped pillar, the centre of a row of circles is placed. These circles are swept with a radius of 4½ ft., are considerably raised in the middle, and are each planted with one variety of plant, generally all Pelargoniums. The intention alike of the form and mode of planting, though the weather has not always permitted of its being realized, is to make each bed a uniform posy, to resemble one huge, flat, cone-shaped plant.

Beginning at the wall, then, we have, first, the lace fringe at its base; next, the hollyhocks; 3rd, the spiral yews and roses alternating prettily; 4th, the circular flower-beds; 5th, the row of Irish yews; 6th, the straight greensward; 7th, the golden yews; and finally, the flower beds. A series of ups and downs, probably my readers will say; but all united by the one commanding purpose of bringing solid heavy masses of masonry to glide through a series of sightly graduating expedients, until the wall and the garden meet, to the mutual advantage of both, and the improvement of each.

Hardwicke House. D. T. FISH, F.R.H.S.

FIG-CULTURE IN FRANCE.

FIGS and Fig-culture seem to be exciting more attention in this country than formerly, and it is well that they do so, for no fruit can be more wholesome or delicious than these, when fully grown and well ripened. The pot cultivation of the Fig tree, as practised so successfully at Chiswick, has already occupied some space in the FLORIST AND POMOLOGIST, and we now propose to glean from Mr. Robinson's recent book* some particulars of Fig-culture as carried on in France, according to the system of M. Dubreuil.

In our own southern counties, *e.g.*, at Arundel, Shoreham, and the Isle of

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* *The Parks, Gardens, and Promenades of Paris, Described and Considered in Relation to the Wants of Our Own Cities, and of Public and Private Gardens.* By W. Robinson, F.L.S. With upwards of 400 Illustrations. London: Murray. A comprehensive and highly suggestive account of French Gardening, especially in respect to those features which bear most intimately on our own practice. It should occupy a place in every garden library.

Thanet, the Fig succeeds well as a standard tree. It is not, however, in this form that it is most successfully treated around Paris, for the frosts are severe enough to leave it little chance of escaping destruction. The plan adopted to protect the trees and fruit is to collect the branches into three or four bundles, and in this form to bury them in a trench beneath little banks or ridges of earth, the crown of the root being also protected in a similar way. Such a plan might very well be adopted in favourable localities in England. The plan admits of being carried out on sloping ground, with a very slight modification, and in this way our railway embankments having a southern exposure might, in many instances, be utilized.

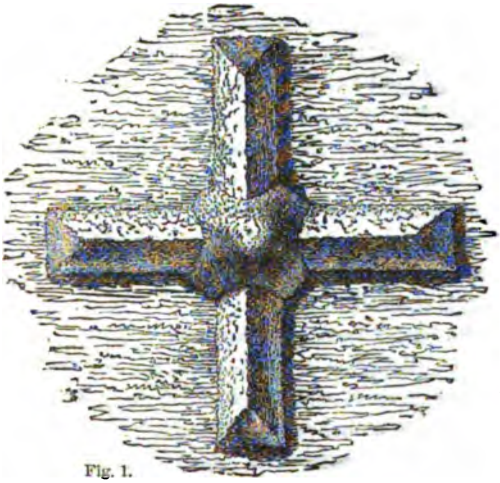


Fig. 1.

In our climate, as in that of France, the Fig, as is well known, produces at the latter part of the season incipient fruit, which form the first crop of the following year; while in spring it produces other fruit, which get matured by the end of summer in very favourable seasons only. The former, called the first crop, or by the French *figues-fleurs*, are the most important, and it is these which the French system of culture is intended to secure; while the others, the second crop, or *figues d'automne*, are seldom of much importance, and are hence, for the most part, unheeded.

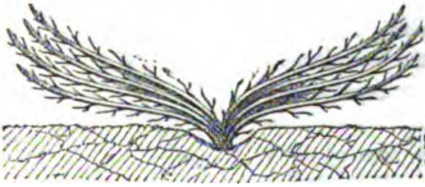


Fig. 2.

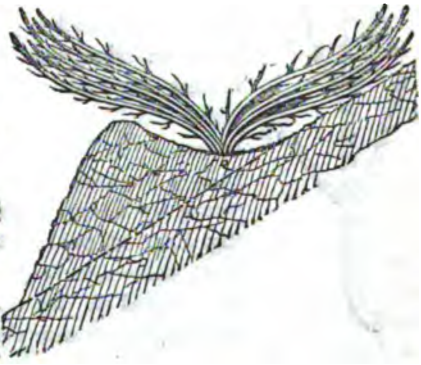


Fig. 3.

The Fig trees are planted at five or six yards apart, in lines four yards apart, the holes being of considerable size, and filled with well-manured soil. Layers are used, and the roots are planted rather deep, the surface of the hole being at least a foot below the general level. During two summers the plants are allowed to grow unmolested, and in winter the branches are covered with earth to the thickness of a foot, as a protection from frost, in the manner described below. In the third spring after planting, the tree is cut at 6 in. or 8 in. from the ground, to induce young shoots, which are to form the principal branches of the tree. These grow on during summer, and in autumn are covered up with earth. A dry day is chosen, when the soil is friable. All weeds and leaves, as well as the half-grown autumn figs, indeed all matters tending to induce decay, are removed, and the branches are divided into four equal bundles, which are tied together with string. A trench is then dug for each bundle, which is covered to the depth of 8 in., a small cone of earth being piled over the roots. Fig. 1 shows the appearance presented after the tree has been covered up; fig. 2 shows the general horizontal direction given to the tree by this mode of treatment, the branches being usually collected into four bunches, which are laid out in the form of a cross. The same kind of arrangement is equally applicable to plants on sloping banks, a basin of earth being formed around the stem to retain water, and the bundles of branches being buried in an up-hill direction. This is shown in fig 3.

Towards the end of February, the buried trees are uncovered, a damp, warm day being chosen. The earlier this can be safely done the more forward will be the crop. Sometimes half the tree is uncovered at the end of February, and half at the end of March, by which plan there is a chance of securing a better average crop. After uncovering, the branches are separated to equal distances, those which are too near the ground being held up by means of forked sticks. The young shoots growing from the stock are henceforward carefully cut off. This brings the operations to the end of the fifth year.

In the following spring, as soon as the uncovered trees show signs of coming into leaf, disbudding is had recourse to. The older branches present the appearance of fig. 4, fig. 5 being an enlargement of fig. 4 A. As soon as growth commences, the terminal buds of all the young shoots are nipped off, in order to favour the development of the wood buds at the base, and to encourage the young figs already beginning to appear (fig. 5 A). About half the lateral wood buds, those nearest the young figs, are also rubbed off (fig. 5 B). Two buds are always left near the base of each branch (fig. 5 D), and one towards the tip (fig. 5 C), to draw up the sap. The end shoot of each branch is treated in a similar manner, buds being retained to form side shoots at about a foot apart. When the young shoots attain the length of about two inches, some of those on the lateral branches and on the end branch are nipped off, mild weather being chosen for the operation. On the former, the shoot nearest the base of the

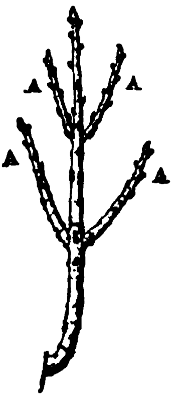


Fig. 4.

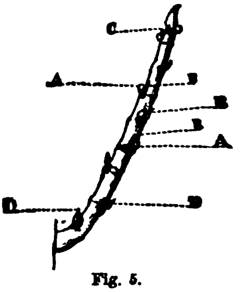


Fig. 5.

branch (fig. 6 C) is allowed to remain, so as to replace the one which bears the fruit of the year. On the latter, a bud near the tip is retained to prolong the branch, as well as some lateral ones to form new fruit branches the following year. The shoots are spaced out, so that they may receive an equal amount of sunshine, and not injure the fruit by rubbing. When the proper number of branches is obtained, all new shoots are removed.

After the crop is gathered, the fruiting branches present the appearances shown in fig. 6 B and 7 B, the former representing the aspect of the branch when only the first crop is taken, the latter its appearance if the shoots have been retained for autumn figs. This should only be done with the more vigorous trees, as the autumn crop weakens the growth, and, moreover, checks the production of the early fruit the following season. When, however, it is done, two shoots are allowed to grow as shown in fig. 7 the one (C) corresponding with C in fig. 6, the other (D) being that which bears the late fruit. In order to force the latter to progress more rapidly, the tip of the shoot is pinched out when it has attained a length of about 5 in. Towards the end of August, a dry day is chosen for clearing the trees. The shoots that have borne fruit are cut off as indicated in the figures, and useless shoots are taken away just above the lowest eye, which, if it should develop the succeeding year, is disbudded in its turn. The wounds caused by pruning are covered with grafting wax. Similar treatment is adopted in succeeding years, the trees, of course, increasing in size.

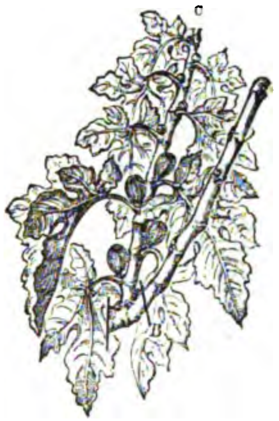


Fig. 6.

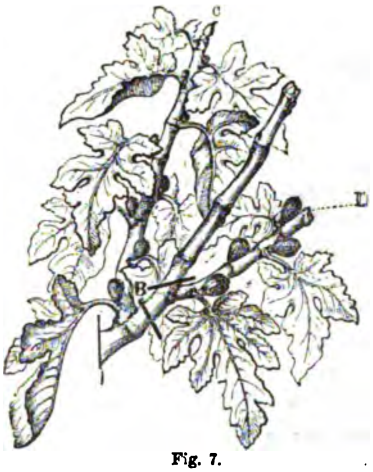


Fig. 7.

The annual earthing-up induces a horizontal direction of growth at about a foot or eighteen inches from the ground, which is advantageous to the trees, as in this position they are not only warmer, but the sap is more equally distributed. The trees begin to bear at six years old, are in full perfection at ten years, and last a long time; but the old stems wear out in from twelve to fifteen years, and require renewal, for which purpose a sufficient number of shoots to replace those to be cut away are retained at the time of disbudding. The soil is dug up annually in spring, and manured every three years. The trees are also well watered several times during the summer. M.

NEW FLORISTS' FLOWERS.

AT a great gathering like the Royal Horticultural Society's Exhibition at Manchester, on August 19, and five following days, it was only natural to look for a large contribution of new Florists' Flowers. They were there, sure enough, but very little of really good quality. A First-Class Certificate was awarded to Messrs. Downie, Laird, and Laing for gold and bronze zonal *Pelargonium Impératrice Eugénie*, a finely-coloured variety, with a golden leaf-ground, and regular reddish-chocolate zone. The same award was made to Mr. Charles Turner for his fine new *Picotees—Admiration*, a remarkably heavy rosy-purple-edged flower of the finest quality and fullest substance, the petals large, stout, and regularly marked; and *Miss Turner*, a medium light rose-edged flower, pure in the ground, and evenly marked. Mr. C. J. Perry, Castle Bromwich, Birmingham, had a stand of fine new *Verbenas*; of these *Rising Sun* and *Butterfly* received First-Class Certificates; the former is a remarkably striking flower, being of a glowing salmon-red ground colour, with small light eye surrounded by a rich deep maroon ring, and of fine substance and form; the latter is of a warm flesh-colour, with a striking crimson ring round a pale eye. This variety is also large in size, and of great beauty.

At the meeting of the Floral Committee at South Kensington, on August 3, Mr. Perry received First-Class Certificates for *Verbena R. H. Vertegans*, a deep-shaded purple, novel and fine; for *Rev. Joshua Dix*, blush, with a deep rose centre, also good; for *Thomas Hyatt*, clear glowing red, shaded heavily with dark around a pale eye; and for *Joseph Sanders*, bright deep red, with a showy lemon eye. All these are very fine, and decided acquisitions. Mr. W. Chater, Saffron Walden, was fortunate enough to obtain five First-Class Certificates for new *Hollyhocks*, the following being the varieties:—*Carus Chater*, dark crimson, flowers large and very full; *Constânce*, pale flesh, very fine; *Leah*, a shaded yellow flower, of good size and full substance; *Junia*, pale flesh-colour, tinted with soft pink; and *Walden Queen*, pale rose, a fine exhibition flower.

A somewhat distinct and well-coloured variegated zonal *Pelargonium*, named *Macbeth*, from Messrs. Bell and Thorpe, Stratford-on-Avon, received a First-Class Certificate, and similar awards were made to the following bedding *Pelargoniums: Sydney Dunstan*, a handsome nosegay variety, with large trusses of brilliant scarlet flowers, from Mr. J. George, Putney Heath; *Claudius*, another nosegay variety, with immense trusses of pale rosy-pink flowers, in the way of Amy Hogg; *Soleil*, also a nosegay, with showy trusses of pale bright scarlet flowers, both from Mr. G. Smith, Islington; and *Gustave de Rothschild*, a dark pink nosegay variety, from Mr. Tirebuck, of Luton, a variety of some promise as a bedder. The same award was made to a very fine zonal variety, named *Coleshill*, with bright scarlet flowers of fine quality, shown by Mr. Eckford, gardener to Earl Radnor, Coleshill. A First-Class Certificate was also awarded to Messrs. Bell and Thorpe, Stratford-on-Avon, for single *Petunia Beauty*, the flowers of a pale lilac ground colour, with the throat, radiating bars, and veins purple. The flower is of good form. R. D.

MONTHLY CHRONICLE.

FROM the tabulated returns as to the state of the Fruit Crops obtained from various parts of the country, and recently published in the *Gardeners' Chronicle*, we learn that as a whole there is a considerable deficiency, caused by the long-continued cold winds which prevailed during the blooming season, and the remarkably hot weather which supervened for a short period, and led to over-excitement of the trees. The general results indicated by the returns in question are these: —Apricots much below average; some of the best crops in Scotland and the north. Apples under average everywhere, except in Lancashire and Cheshire, and in some parts of Wales. Pears everywhere over average, except in the western counties. Plums generally below average; Damsons very plentiful in some of the northern and midland counties. Strawberries variable, but generally deficient, except in the north. Cherries, a fair crop everywhere, except in Kent, Morellos being plentiful and good. Peaches and Nectarines below average almost everywhere, some good crops being, however, reported from Lincolnshire, Nottinghamshire, and Yorkshire. Figs in some places good, *e.g.*, Yorkshire, Leicestershire, Oxfordshire, Worcestershire, Suffolk, Herts, but generally below average. Small fruits abundant almost everywhere. Nuts extraordinarily plentiful in most places, but Walnuts a light crop.

—— The Council of the Royal Horticultural Society has announced its intention of modifying the meetings and exhibitions of next season, by strengthening the fortnightly meetings, and abandoning separate shows, not, however, abandoning the shows themselves, but by this compression reducing the number of meetings. The meeting day is to be Wednesday instead of Tuesday, as being a better day for securing an attendance of visitors. All the meeting days are to be show days of a major or minor order, but no separate shows except the provincial show will be held. The days fixed are the third Wednesday in January and February, the first and third Wednesdays in each month from March to September inclusive, and the first Wednesday in October, November, and December. At each meeting or show some characteristic flower or fruit in season will be selected as the special feature and the subject of special prizes, while other seasonable objects will be grouped around it sufficient in quantity to make up a larger or a smaller exhibition. These arrangements are intended to fit in with the scheme of International Exhibitions which has been announced by Her Majesty's Commissioners for the Exhibition of 1851.

—— The Seed Adulteration Bill has become law, and will come into operation on May 1, 1870. This Bill has been promoted and carried to a successful issue by the Seed Trade itself, the members of which are now organizing an Association the more effectually to carry out its provisions.

—— The collection of Grapes, from Dalkeith, illustrating the effects of the application of Bottom-heat to the roots of the vines, was one of the most interesting exhibitions at the recent Manchester Show. The collection consisted of White Frontignan, Grizzly Frontignan, Muscat of Alexandria, Reeves' Muscadine, Rivers' Muscadine, Chasselas Napoléon, Black Alicante, and Royal Muscadine. They had all been cut from one house; had all been planted in May, 1868, chiefly from eyes of that year; and had all been subjected to a bottom-heat from piping placed under pavement, varying from 90° to 105°, except in the case of one vine, a Royal Muscadine, which had had no bottom-heat whatever. This latter variety, which, under similar conditions, would have preceded the Muscat in ripening by at least two months, was under these conditions not so much matured as were the Muscats grown in the same atmosphere, but with bottom-heat. This is a striking fact in support of the advocates of bottom-heat for forced vines.

—— We note that the Royal Horticultural Society's Manchester Show has proved more successful in a financial point of view than was at one time anticipated, the receipts being about £1,900, and the expenses about £1,500. This amount would probably have been doubled had the society received that countenance and support from Royalty which it was led to expect, and which, indeed, was more or less publicly announced. The show itself was one of considerable extent, occupying five long tents and one large circular tent; it was also of fair average quality—good in some points, vegetables especially; the stove and greenhouse plants being, moreover, generally good, as were also the Conifers, and some of the fruit. Amongst the gems of the show were Mr. Hole's Roses, Mr. Dixon's Anæctochilus, Mr. Baines's Sarracenias, and Mr. Stevenson's Alocasia Jenningsii. The Horticultural Congress was a new and very successful feature of this meeting.

—— CUCUMBERS for Exhibition should be straight, evenly swelled close up to both ends, smooth or free from ribs on the surface, and in length about nine or ten times the diameter. Generally, dark-green varieties, with plenty of bloom and black spines, are preferred, though as the best of all Cucumbers belong to the smooth-skinned Syon House breed, these latter points involve sacrificing quality to appearance. Hence at all exhibitions there should be separate classes for the different races of Cucumbers.

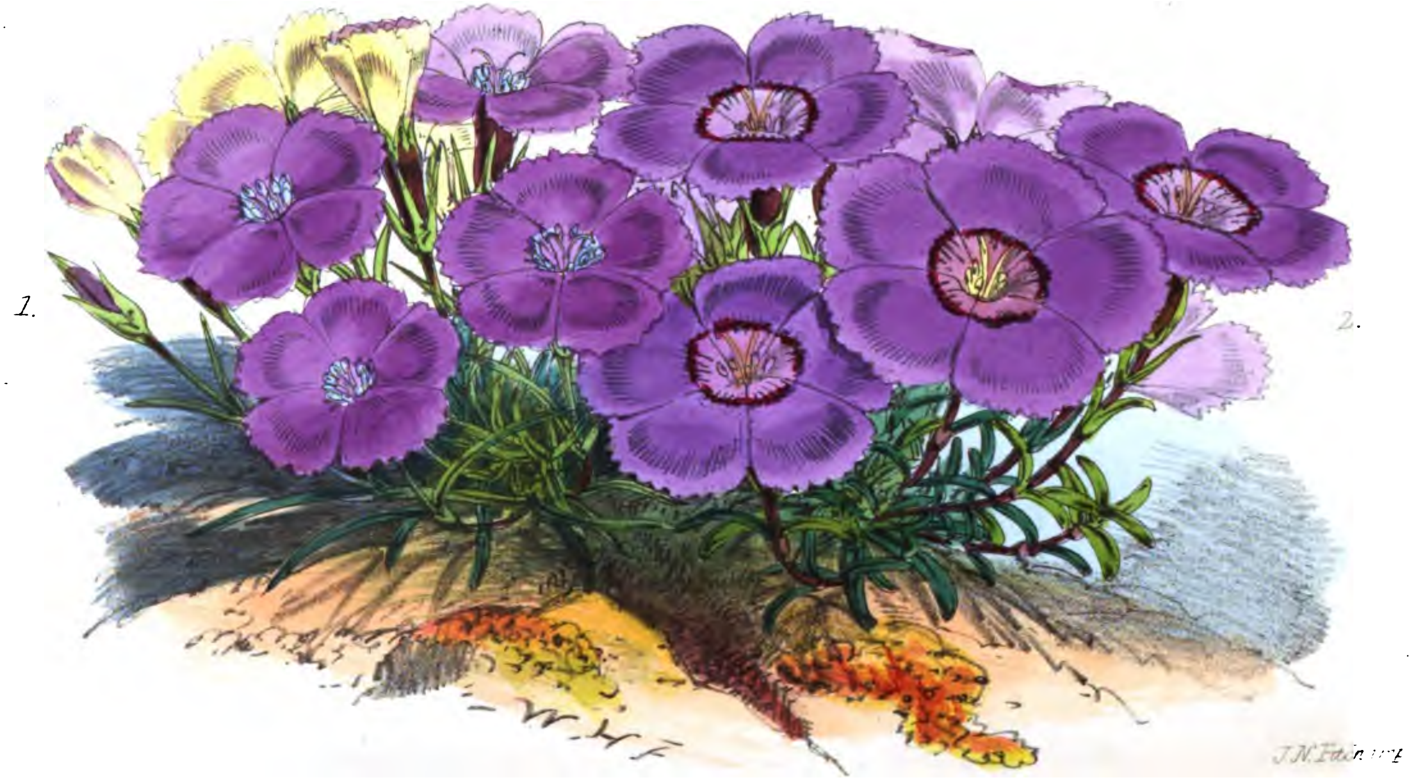
—— THE Selby Flower and Fruit Gatherer, introduced by Messrs. Dick Radclyffe and Co., of High Holborn, is a handy and ingenious form of flower-scissors. By means of a spring clamp attached to the cutting blade, the stalk of a flower as soon as severed is caught and retained firmly till purposely released. It will be a most convenient implement for ladies. It is stated to be able to cut and retain bunches of fruit to the weight of 4 lb., or, indeed, up to 7 lb.

Obituary.

—— MR. OSMAN RHODES, of the Crystal Nursery, Sydenham Park, died on the 8th of July, aged 40. Mr. Rhodes had been well known for the last 20 years as a first-class plant-grower and exhibitor. He had also successfully turned his attention to the improvement of hot-water apparatus.

—— MR. JOHN B. WHITING died on the 19th of July, at the residence of his son, near Hereford. For nearly 30 years he was gardener at the Deepdene, Dorking, which position he had only quite recently resigned. He was not only esteemed for his personal worth, but also for his eminence in his profession, and for his sound, sensible contributions to the gardening journals. In his younger days he was employed in the gardens of the Horticultural Society at Chiswick, and he retained to the last his connection with that Society by his services as a member of the Fruit Committee.

—— CHARLES B. WARNER, Esq., died at his residence at Hoddesdon on the 27th of July. Mr. Warner was formerly one of the most successful growers and exhibitors of Orchids, but for some years past he had given up growing for exhibition, and confined himself to keeping up a select collection for his private gratification. At the period above alluded to, he was an active Fellow of the Royal Horticultural Society, and for some years occupied a seat at its Council-board. He was an earnest supporter of cottagers' shows for fruit and vegetables, and in this, and many ways, so brought his influence to bear on those around him, that his loss will be severely felt.



1. Dianthus neglectus.

2. D. alpinus.

DIANTHUS NEGLECTUS AND ALPINUS.

WITH AN ILLUSTRATION.

THE subject of the annexed illustration, Dianthus neglectus (fig. 1.), is one of the loveliest of the Dianthus family. It combines the dwarf sturdy character and fine form of the handsome but rather fastidious Alpine pink, with the vigorous constitution of the common or the maiden pink, and forms tufts which resemble short wiry grass. The leaves are slightly glaucous, concave, pointed, and, except in vigorous specimens, from half an inch to an inch long, the lower ones on the stems being somewhat longer. The flower-stems rise from one to four inches high, according to the position and soil in which the plants are grown, are freely produced, and each bear a solitary flower, or rarely two, about an inch, or, in vigorous specimens, an inch and a quarter across, and of the purest, deepest, and most brilliant rose, the petals being quite level and firm-looking, with the outer margins slightly notched. In a wild state, and in poor sandy earth on well exposed rock-work, specimens may be seen in perfect bloom and robust health at one inch and a half high, and even less; but at lower altitudes and in a deeper soil, it is sometimes to be found three, four, or five inches high. In rich deep sandy soil in gardens it will also attain this height, or a little more, perhaps at some slight loss of neatness and compactness, It is surpassed by no Alpine plant in vividness and purity of colour. It is so dwarf in habit, and has flowers so large, that tufts of it might at first sight be taken for the Alpine Pink, Dianthus alpinus (fig. 2), but its narrow and sharply-pointed grass-like leaves immediately distinguish it from that species. The colour is also more vivid than in D. alpinus. It is happily very easily grown, unlike some of the other Alpine Dianthuses flourishing freely in very sandy loam, either in pots or on rockwork. It roots through the bottoms of the pots as freely as any weed, is perfectly hardy, and a very gem either for chinks or level spots on rock-work, in all parts of these islands. The fact that it is so very free renders it useful for the front margins of mixed borders in fine sandy soil, but when planted thus, it should be surrounded by a few stones half plunged in the ground, to prevent evaporation and guard it from injury, It is a native of the highest Alps of Dauphiny and the Pyrenees, Switzerland, and Italy, and is easily increased by division, and by seed. It was introduced to cultivation by Messrs. Backhouse, of York, from whom the annexed figures are derived. W. B.

THE STIRLING CASTLE PEACH.

RAISED a few years ago at Dunmore, by Mr. Carmichael, now the Royal gardener at Sandringham, this Peach was sent out by Messrs. Osborn and Sons, of Fulham, having for its character "an improvement of the Royal George." Until this season I have never had an opportunity of seeing the Stirling Castle in such condition as to enable me to form an opinion of its merits, and the sample I send is that which encourages me to speak in its favour. The tree from which the sample was gathered is one of the batch first sent out; it is planted on the back wall of a Peach case, and is 8 ft. from the front glass. The fruit are not sent as a sample of weight (none of them are 8 oz.), but as a fair sample of a fair crop on a young tree. As regards flavour, my impression is that it is not so juicy and sprightly as the Royal George, and the flesh is rather inclined to eat woolly.* In these particulars, however, it may improve as the fruit becomes better developed from older trees. My experience of Peach trees teaches me to believe that the older the trees the larger the fruit, so that in this belief, my intention is to allow the Stirling Castle plenty of room to extend and fully develop itself.

My mode of training is that known as Seymour's system, and to this system I mean to adhere until I am convinced of a better. Of all trees under a gardener's care I believe the training and cropping of the Peach to be least understood. I have initiated all my young men into this system; it is easily understood, and when once they know it I have no further trouble with my trees. Several of my young men, after having mastered this system, have told me that now they have a rule to work by, whereas formerly they trained without a rule. If Mr. Carmichael should succeed in raising another peach equally good, I should be inclined to ask him to name it the "Abbey Craig," on the summit of which now stands the abortive monument to Wallace.

Combe Abbey Gardens. WM. MILLER.

NOTES ON FLOWER-BEDS.

IT has recently occurred to me that if some of the contributors to the FLORIST AND POMOLOGIST were to give a description of four or six of the most satisfactory of their flower-beds, as they were arranged during the past summer, something would be gained by all lovers of the flower garden. I think I may say that there are very few persons who are not interested in a good arrangement of the flowers in their gardens. These notes should be furnished during the winter months, so as to be made use of when the bedding-out time of 1870 comes round. The six flower-beds I have described below are selected out of about forty, which were filled with bedding plants this season:—

1. Pelargonium Amy Hogg mixed with Madame Vaucher. The beautiful purple rose tint of the former blends charmingly with the latter, which is pure white. Amy Hogg is rather the stronger grower, but this little difficulty may be overcome by planting old plants of Madame Vaucher and young plants of Amy Hogg. What I should recommend, however, and what I intend next season to adopt, is to plant the centre of the bed with Amy Hogg, and to use Madame Vaucher at the outside as an edging.

2. Pelargonium Stella, mixed with variegated Alyssum. This bed is of the same shape and size as No. 1, and is intended in some degree to correspond with it. The effect of the arrangement is very good, the large, fine heads of Pelargonium bloom rising above its companion, the variegated Alyssum, and having a very charming effect.

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* Our opinion exactly coincides with this. The fruit sent were good examples, 9½ in. in circumference, very deeply coloured, the flesh also much stained, but rather stringy.—ED.

3. Pelargonium Mrs. Pollock in the centre, with one row of Viola cornuta, and edged with Cerastium tomentosum. Next season I intend to plant Verbena Purple King instead of the Viola, as it is not to be depended on through a dry summer. This Violet is very beautiful in the early part of the season, and in the wet, dripping summer of 1867 it was the best thing in the garden here, but this year it has been quite a failure.

4. A four-lobed bed. This is planted with Perilla nankinensis in a square in the centre, the four rounded lobes being filled with Pelargonium Countess of Warwick. Around the whole runs a single line of Pelargonium Baron Ricasoli, a dwarf horseshoe-leaved variety, with bright scarlet flowers, while for an edging we use Cerastium tomentosum. This is, without doubt, the best white edging plant we have, if properly managed. Our own method is to keep it cut close with the hand shears, and to tread it down to the ground when quite dry, which with us prevents it from damping off.

5. A nearly square bed, 10 ft. long by 6 ft. wide. The centre is planted with Verbena Purple King, in the shape of a diamond, so arranged that the Verbena comes in a point to both sides and both ends of the bed. The corners are filled with variegated Alyssum. To those who like a little novelty, I can strongly recommend this arrangement, as the contrast of the purple Verbena with the white Alyssum is very good.

6. A shaded bed, 10 ft. long by 5 ft. wide, with square ends. It is planted in straight lines, the dark Perilla nankinensis in the centre, with one row on each side of Centaurea candidissima, one of the most beautiful of white-leaved plants we have. The outside row is Amaranthus melancholicus ruber, a deep red-foliaged plant. Thus not a flower is seen on this bed all the summer, but there is not one in these gardens which, during the present season, has been so much admired as this, and which is entirely filled with plants having coloured leaves. We have other arrangements to correspond with this, but the effect is not so good.

Elsenham Hall Gardens. WILLIAM PLESTER.

PINE-APPLE CULTURE.

THE culture of the Pine-apple, the king of fruits, has, within the last few years, undergone a marked change for the better. For very many years the same unvaried routine, which marked the practice of Sir Mathew Dickens, in the seventeenth century, had, with much pertinacity, been followed, until some of our expert and successful cultivators broke through the arbitrary laws which time had sanctioned, and brought the period necessary for rooting, growing, and fruiting the well-formed sucker within the compass of a few months, instead of years.

I am not about to enter into minute details concerning the best mode of culture, for there can be no doubt, all other matters being favourable, that the quickest way of producing fruit of good quality is the best; and those who well understand the laws which govern the practice needed in the production of a healthy vegetation under an artificial regimen, need have no misgivings concerning growing this fruit successfully, in so far as size is concerned, if proper means exist, and the necessary attention is paid.

The present system, or what I may term the hasty modern way, of growing this fruit, however, has much in it that is antagonistic to good flavour, and what can be more insipid than a flavourless Pine-apple? It is regarding this subject of flavour that I wish more particularly to speak. So much has the quality of imported Pine-apples improved of late, that this subject will become a matter of some moment to the growers for market, who are already somewhat on the increase, and who need "look to their laurels." It seems superfluous to remark here that the quicker fine fruit can be produced, so much the better in a marketable point of view, but the question really at issue, and the one likely, I fear, to act antagonistic to the producer in the end, is :—Whether the independent buyer will, for the sake of display alone, continue to purchase these fruits at a high price, however much they may grace a dessert, when it is found that there is very little enjoyment to be derived from their consumption.

Upon more than one occasion lately this question has been put to me:—What makes my plate overflow with juice from the Pine-apple when cut, while the flavour is so inferior to what it used to be? And these inquiries have really suggested the few remarks I am now making. The very fact that the Pine-apple belongs to the much enduring order of Bromeliads, fully explains how it is that it may readily be made to "fall in" with almost any mode of treatment. It is capable of subsisting to a very great extent upon the amount of atmospheric support the leaf-surface alone can absorb. Like the Æchmea and its other allies, it may be severed from the root, and be tossed to and fro for an indefinite period of time with impunity, so absorbent and retentive is it. With these facts before us, the road to the attainment of good size and perfect flavour, is made tolerably plain.

To dispense with the subject of over-potting, or any argument relating thereto, I may say at once that large pots are positively detrimental to fine fruit, as regards both size and flavour. Once the suckers or crown cuttings are potted, the primary thing to be attended to is the production of roots in as great a profusion as possible; which is attainable by affording a brisk bottom-heat, with but moderate atmospheric heat or humidity. This is opposed to the vapoury and excessive aerial warmth which some growers maintain at such a time. With the plentiful roots thus obtained, and by checking somewhat the superabundance of the superstructure or surface growth, a fair start may be assured, the plant being perfect in its organization. Plants which are thus self-supporting, are much better and more capable of withstanding fluctuations of heat, air, sunshine, and cloudy weather, than others which have been pushed on and forced to make a fine surface show in an extremely high temperature, shaded constantly, and often reeking with vapour, while they possess a questionable amount of roots.

During the next stage, the plants being now in the heigh-day of their growth, I would have resort to just that sort of treatment which I have hitherto condemned, save in this, that more air should be given, and less shading, the plants being duly prepared for this. In lieu of a faultless green surface growth, "frim," and somewhat watery, this treatment would impart to the leaves a better-ripened fibre, and give to them just that amount of native bronze which denotes a capacity for yielding good flavour. During the actual flowering period, yet more air and light may also be permitted. During the next stage, actual enlargement is to be encouraged by abundant supplies of heat, moisture, light, and air, until the preliminary ripening stage is attained, when the fullest exposure may be afforded without any fear of injurious consequences to the leaf-surface, such as would be likely to befall plants treated more tenderly, and supplied to excess with heat, shading, and moisture. I ask the opinion of more able practitioners on this subject. The Pine-apple seldom receives notice in our garden literature.

Digswell. WILLIAM EARLEY.

MISTLETO ROOTS.

I MENTIONED in these pages, some time ago, that Mistleto cannot be propagated except from seed introduced on the bark of the foster tree; but I find that in some localities where apple trees are much infested with the parasite, there is a belief that it is produced from the effects of its juice, without seed. This, however, is contrary to the opinion that the *alburnum*, or pulpy matter in the rind of trees, serves to keep them true to their kinds. On giving further observation to this subject, I found that Mistleto certainly sprouts from the bark of trees without the intervention of seed. Such instances, however, are merely sprouts or germs from the roots of established "mistleto boughs," which creep or grow concealed under the bark of the trees that support them, and of which, on cutting the bark near the Mistleto stem, the roots may be seen appearing like hairs, or when slightly magnified somewhat like common pins. These observations were made on apple bark, from which a Mistleto shoot was broken off last season. The scar or wound resulting from this accident is now surrounded with the germs of Mistleto, even beyond the scar.

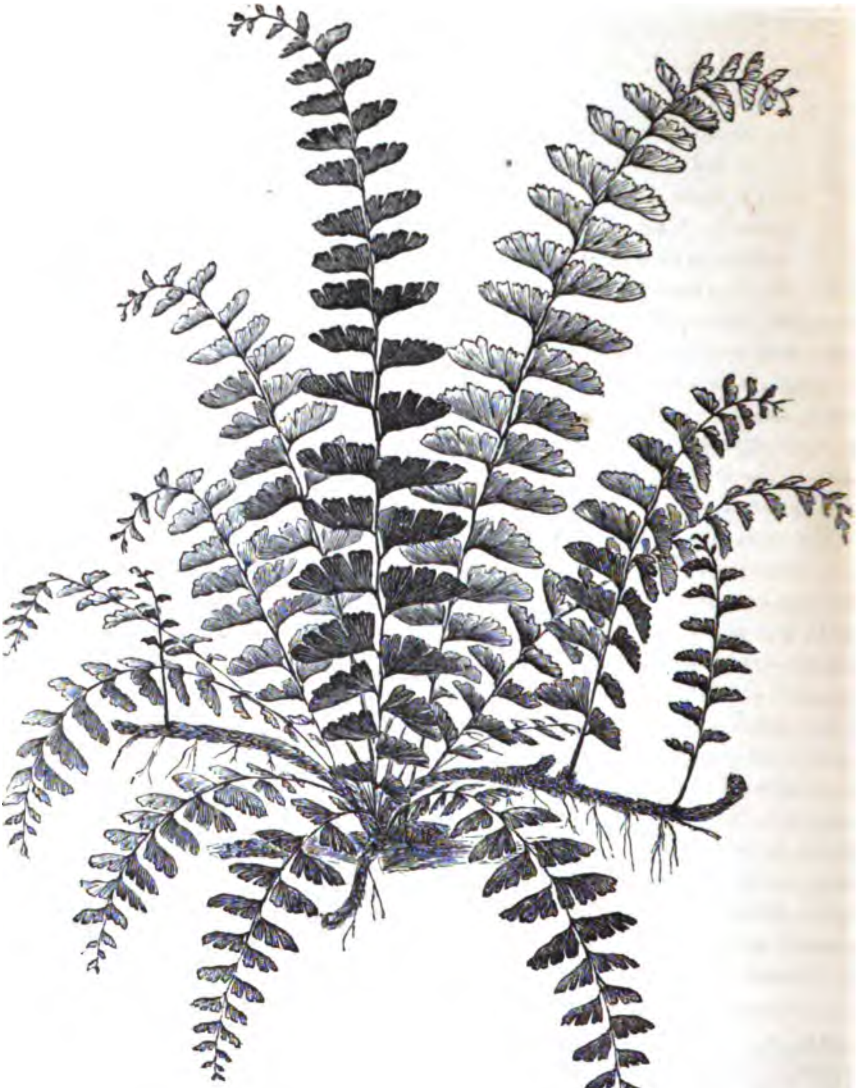
Previous to that, I had examined stems of Thorn trees on which the young parasite was seen sprouting in all manner of ways, and upon parts where birds could not rest to clean their beaks of the viscid matter after they had eaten the berries,—one means by which Mistleto is commonly supposed to be propagated. Nor was it done from rubbing the berries which contain the seed upon the stems of the trees. Having seen that the parasite propagates itself from its roots in the bark, I may suggest that perhaps if pieces of bark which contain such germs were inoculated or budded on the same kinds of trees from which they were taken in spring, Mistleto might be introduced into new localities, especially in the North, where it is not found, though, being very hardy, the climate cannot be a hindrance to its growth. The process of growing Mistleto from seed is very slow, the germs being hardly visible until after the second season, though after that they quickly form bristly tops.

Cossey Park, Norwich. J. WIGHTON.

DAVALLIA HEMIPTERA.

FEW more elegant basket ferns than this have been introduced to our hothouses, and none more suitable for this mode of cultivation. We owe its introduction to the Messrs. Veitch and Sons, of Chelsea, who have obligingly furnished us with the annexed illustration, which scarcely shows the segments sufficiently cut. It is one of Mr. Lobb's discoveries in Borneo, and has gained a First-Class Certificate.

This little fern is of close, compact growth, notwithstanding that it is furnished with a slender, creeping, scaly caudex. Hence, it forms a dense mass of delicate



evergreen linear pinnate fronds, which grow from four to six inches in length, and are exceedingly beautiful. The pinnæ are dimidiate, that is to say, developed only on one side of the costa, and hence the name of hemiptera, which means "half-winged." They are developed on the anterior side, and are cut down nearly to the costa, the lobes being more or less deeply parted in a bifid manner, and bearing the short davallioid sori across the end of the segments. It is a very free-growing species under basket treatment, if kept in a moist stove, planted in porous materials, and kept duly supplied with water. M.

THE PRUNING OF FRUIT TREES,

AS AFFECTED BY DIFFERENCES OF SOIL, CLIMATE, STOCKS, ETC.*

FRUIT Trees are, it is to be presumed, mainly cultivated for the sake of their fruit, and much may be accomplished towards this end by a rational system of pruning. The judicious pruning or non-pruning of fruit trees is a question far more important than that of training, with which it is frequently confounded. Training is the producing of form—an ornamental part of the business, but pruning is chiefly performed for the sake of securing fruit. To prune a fruit tree is a very different thing from pruning any other sort of tree, inasmuch as the production of fruit is much more difficult than that of timber, or mere form. It is easy to grow a tree and prune it so that it may assume any desired form or size, but to make that tree produce good fruit in large quantity, and of good quality, requires much more skill and knowledge.

To prune a tree is to cut off a portion of its stem or branches, and the object to be attained is to regulate the vegetation of the plant. The immediate effect of pruning, or the cutting-off of any portion of a plant, is to cause the parts which are left to increase more rapidly. Thus, if a tree is growing vigorously and making strong unfruitful shoots, the effect of pruning it back in winter is to increase its vigour, instead of repressing it. All winter pruning, or pruning after active vegetation has ceased, results in producing greater vigour in a plant; therefore, a vigorous, healthy-growing tree requires less pruning than a weakly-growing one.

A special point to be aimed at in fruit-culture is equality of growth, and thereby uniformity of action throughout all the parts of the tree. The most unfruitful of all trees are those in which one portion is allowed to have a great ascendancy over the others. The stronger portions of these have then to be repressed, and the weaker portions encouraged. Excessive vigour is undesirable, as trees in that condition bear but a small quantity of fruit; yet it is as possible for a tree to be too weak, and to produce too many small fruits.

A glance at the natural tree vegetation of the country will show that soil exerts a powerful influence thereupon. Thus it will be seen that in one locality the trees are of a dwarf, stunted character, and perhaps very fertile, while in another, they are rampant and vigorous. In the one case, we have probably poor, sandy soil, and an exposed situation; and in the other, deep alluvial loam and comparative shelter. Good fruit may be produced in each situation, yet under very different conditions. Here, then, is Nature teaching us, and her general laws we must obey; but though we cannot alter this natural order of things, much may be accomplished by skill in moulding them to our purposes. The light soil may be enriched, the strong loam impoverished, and shelter may be procured, but all this can only be done in a very limited way.

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* Abridged from a paper read before the Royal Horticultural Society at Manchester, July, 1869.

Again, Climate greatly influences the growth of trees, and in some respects its effect is similar to that of the soil. Thus, a damp climate, such as that in the south-west of England, counteracts the effect of a dry soil, assimilating the results to those afforded by a deep rich soil in a dry climate. In a damp climate trees grow much more luxuriantly, as a rule, than in a dry one; and as luxuriance of growth is unfavourable to fruit-bearing, our treatment of the trees must again be modified to suit the altered conditions. In the orchards of Devonshire, and other parts with damp climates, there is a remarkable natural check put upon the growth of the trees, which would otherwise be over-luxuriant and unfruitful, namely, the growth of Mosses and Lichens on their trunks and branches, caused, no doubt, by the continued dampness, and the presence of which serves, in my opinion, as a beneficent check upon over-luxuriance, and induces greater fertility than would otherwise be obtained. Here, then, is Nature repressing vigour more effectually than we can do by the employment of any artificial means. It being, then, impossible to alter soil or climate to any great extent, we must perforce, if the greatest success be desired, cultivate only those trees which are most suitable, and that after the manner most in accordance with their natural tendency. In short, in a locality where trees naturally grow but slowly, dwarf or miniature fruit-tree culture will be the most advantageous; and where trees naturally grow luxuriantly, they must be allowed to do so, the modern dwarf, closely-pinched fruit trees being, for the most part, unattainable.

Another important subject is the influence of the Stocks whereon we may graft our fruit trees, and which is in many ways marvellous. It is as yet a subject very imperfectly understood, even by fruit-growers themselves, whom it most intimately concerns. We have not only stocks which impart greater vigour to the plant, and those which check luxuriance and induce greater fertility, precocity, and a tendency to maturation; but we can also select stocks which enable us to cultivate fruit with an almost equal amount of success on damp clayey soils, as on dry sandy loams.

By way of illustration, we may refer to the successful results attained by Mr. Rivers, in his magnificent culture at Sawbridgeworth, with myriads of pretty miniature bushes, and pyramidal and cordon trees, all densely laden with fruit; and we may further be enlightened as to the practice pursued to produce such success, and become in consequence impressed with its desirability, and induced to go and try to do likewise—to have our fruit trees all grown in the same miniature style, &c. They see the results, and seize the idea, but in many cases forget the conditions or other advantages through which these trees have attained their present fruitful state. The natural tendency of tree vegetation in the soil of Sawbridgeworth is towards early fruiting, for throughout nearly the whole of these nurseries there is a great deal of calcareous matter, which will be found, wherever present, most favourable for fruit-culture. It is greatly to the predominance of this chalky matter in the soil, though partly to its exposed situation, and to the use of suitable stocks which give a dwarfing tendency, but most of all, to Mr. Rivers' skill in taking advantage of all this, that we are to attribute his immense success in the culture of miniature fruit trees. The trees grow slowly, yet sturdily, and make short-jointed wood, well supplied with fruit buds. Indeed, the difficulty of their having too much of a fruiting tendency occurs at times, the trees being thereby soon exhausted. It is desirable at all times that fruiting trees should produce a certain quantity of young shoots, as on the influence of the leaves so produced and on the vital action thereby infused into the plant, depends chiefly the quality of the fruit. To induce shoot formation, the pruning-knife may be used to great advantage, and the shoots cut closer back, although there may be little to prune. In fact, the trees may be kept in smaller compass than that which would be prudent to adopt in the case of trees growing very vigorously. The cultivation of miniature fruit trees, at 4 ft. apart, under such conditions is highly commendable.

To reverse the picture, let us visit the rich valley of the Thames, with its deep alluvial loam, and look at the fruit-culture in some of the market gardens —for example, that of Mr. Dancer, at Chiswick. Here there is also fruit in abundance, and of the very finest quality; but the trees, instead of being dwarf and fruitful, are large, rampant, and vigorous, and although while in a young state they produce but little fruit, still as they attain age, if not overpruned, fruit is produced in immense quantities.

Assuming the stocks, &c., used in each locality to be the same, in the one case, winter or close pruning would be necessary to induce greater vigour, and prevent over-fertility and weakness; while, in the other, the object would be to reduce luxuriance, and this would be best effected by non-pruning, or at most, by merely thinning-out the shoots and branches where crowded, so as to expose the remaining ones more freely to the influence of light, leaving the strong-growing young shoots at almost their entire length; they next season produce a less vigorous growth, and as a consequence become more fertile, on account of the forces of the plant not being concentrated on a few buds, but being required to spend itself over many. In short, in the one case, miniature fruit-tree growing is advantageous and practicable, simply because the trees are not inclined naturally to grow larger; and in the other, it is almost impossible, because the trees naturally grow too luxuriantly.

Excessive vigour may, however, be considerably repressed, and fruitfulness induced, by judicious summer pinching of the growing shoots, and also to a great extent by root-pruning. The first, *i.e.*, summer pinching, is of paramount importance, and by constant application a great deal may be accomplished. It is an operation absolutely necessary in the culture of miniature trees. The pinching or taking-away of any portion of the leaves arrests the flow of sap in that direction, and directs it towards the parts which are left. Thus, by stopping the stronger-growing portions, which are those on the upper parts of the tree, and which are in advance of the lower or weaker portions, we equalize the flow of the sap, and cause a uniform action throughout. This stopping and checking of the shoot-growing propensities of the tree tends towards the formation of fruit-buds, excepting in some cases, namely, in very rich soil, and where it is attempted to confine the energies of the tree within too narrow a limit. Under such circumstances, the most incessant summer pinching will fail to induce fertility, but will result in the continued production of watery shoots, and a gradual weakening of the tree. In such cases, root-pruning may in some instances be resorted to with advantage. Root-pruning in the case of miniature fruit-tree culture is in many soils necessary to keep the trees within bounds. It should, however, only be appealed to as a last resource, after all other modes of checking vigour and inducing fertility have failed. Root-pruning tends too much to weaken the whole system of the tree, to take away the powers of the plant which are required for the support of whatever fruit may be produced. It is not exactly a weakening of the entire system of the tree which is required, but a retention of all its powers, and a direction of their forces towards the production of fruit, instead of shoots.

I recommend those who may be commencing fruit-culture to take well into consideration the soil and situation of the place, and then the object, whether the production of fruit simply, or fruit combined with the formation of the trees after some particular form. Whatever may be the object, the condition of the soil should be considered, and the trees selected should be worked on stocks whose requirements can be best supplied by that soil, and by the mode of pruning and general cultivation intended to be adopted.

Chiswick. A. F. BARRON.

PRIMULA PEDEMONTANA.

WE have to thank the Messrs. Backhouse and Son, of York, for the opportunity of illustrating the beautiful Alpine Primrose, which forms the subject of this note; and which was introduced by them from the Graian Alps of Piedmont.

The plants form a close rosette of obovate sinuatley-toothed leaves, from among which rise the flower-scapes to the height of from five to six inches, bearing clusters of about seven or eight flowers, of a pleasing bright purplish or magenta rose, sometimes with a white or pale-coloured ring around the throat, and measuring an inch across the limb of the corolla, the lobes of which are obcordate. These flowers are produced in spring.

We learn from Mr. Backhouse, who has closely studied this race of plants, that the alliance of P. pedemontana is with P. viscosa and P. integrifolia, from both of which, however, it conspicuously differs. "It is of easy cultivation in a mixture of loam and peat, interpersed with bits of stone." M.

THE MULBERRY TREE.

I AM very glad to find that the attention of your readers has at last been directed to this valuable fruit tree. Allow me, then, to state that the reason why the fruit is not seen at any fruit exhibition, why it is not found on the dessert-table, and why it is not marketed like other garden produce, is because it will not bear packing, either in large or small quantities. Therefore it is always eaten from under or from off the tree. The fruit is most agreeable and wholesome, in any form, either fresh or preserved. No garden or lawn, where there is room, ought to be without a Mulberry tree.

I have a tree of somewhat extraordinary dimensions, growing on a very stiff clay soil. The trunk is 3 ft. 10 in. high, and 4 ft. 6 in. in girth; the extreme height of foliage from the ground is 28 ft., and the outside circumference 159 ft. The form is a complete dome. It was planted by my father fifty years ago, and has survived without injury the two first of its three stages of growth, which are—25 years in getting to perfection, 25 years remaining in that state, and 25 years declining. It is one of the most beautiful trees imaginable, and ought to be seen now (August 21) whilst its beauties are perfect.

Rye, Sussex. EDWIN NATHANIEL DAWES.

THE CULTURE OF THE CALCEOLARIA.

THE great improvement which of late years has been effected in the herbaceous varieties of this beautiful plant has led to its greatly increased cultivation as an ornamental plant for the conservatory, without reference to its particular properties as a florists' flower. For this purpose the plant is well adapted, and will amply repay the cultivator when both the strain and the habit are good. The culture likewise is so simple and easy, that no one who has a cold pit at command need be without a good show.

In early days, the varieties of this plant were usually propagated by cuttings, which entailed a great amount of care. So long as the varieties were few in number, this was an unavoidable necessity; but now the size, form, and colour of the flowers are so good and afford such infinite variety, and the habit of plant is so much improved by a system of culture from seed alone, that propagation by cuttings is not needed, unless it be in the case of very superior varieties, for the mere purpose of crossing. The system, therefore, now generally adopted, and which is greatly to be preferred, is to treat it simply as an annual, thereby effecting a great saving of time and trouble, no light consideration in these days, when the number of subjects claiming the gardener's attention seems multiplying *ad infinitum*.

The first requisite is to obtain good seed. Fine strains are to be bought in the trade; but cultivators generally like to have a strain of their own as well, and to have it good the sorts must be carefully crossed, in the performance of which operation a few leading objects must be kept in view, such as the size, shape, and colour of the flowers, and the habit of growth. The aim should be to obtain the three first, on plants of a dwarf and compact habit of growth. Some sorts are so rampant, that they spread out in all directions, requiring a forest of tall sticks to keep them in bounds. Such should be discarded for hybridizing, unless the flowers are very superior in shape and colour, when they may be used to fertilise the flowers on a dwarf-habited plant, of which there are many that never require the support of a stick. It is best to remove from the general stock the plants selected for crossing, and to place them where they can have sunshine under glass, leaving only a few flowers on each plant, and taking care to effect the fertilization in due time during the middle of the day, when the sun is out. Observe that a dozen good pods of seed will furnish a very large supply of plants.

The seed should be allowed to ripen thoroughly; in most cases this will be accomplished about the end of August, about which time also it ought to be sown. We use shallow pans filled with light soil, which should be pressed down to a perfectly level surface, one-eighth of an inch below the rim, and then a little silver sand scattered over the surface to fill up interstices. They are then watered with a very fine rose, sufficient water being given to permeate through all the soil. When it has drained off, the seeds are carefully sprinkled over the surface, and a little more silver sand is spread over the seeds. The pans are then placed on a level surface of coal ashes under a north border, and a hand-glass is put over them. No water will probably be required for more than a week, but when necessary it must be very lightly administered, to avoid swilling the seeds off. Snails must be guarded against through all the early stages, but especially when the plants are very small. I have known them in one night to spoil the hopes of a season. The seedlings are carefully pricked into shallow pans, about an inch apart, as soon as they have made four leaves. The pans are then placed in a cold pit, on a cool bottom, but near the glass, kept regularly watered when necessary, shaded from bright sun at first, and most important of all, thoroughly ventilated—a point which must never be neglected in any of the stages. Here they remain until ready for potting-off.

One important consideration presents itself to my mind with regard to these plants, which is, that they should never be allowed to become so much pot-bound as to cause a stagnation in their growth, so as to induce in their early stages a premature inflorescence. If frost is kept from them, they continue growing all through the winter, and may, therefore, be potted on at any time, when the roots have well developed themselves in the pots, even although it may be midwinter, providing it does not freeze. In about a month from the time of pricking-out, they will be ready for potting-off. I prefer putting them into small 60's, and return them to a cold pit near the glass. About November they will be ready for a shift into 5-in. pots, in which they may remain without injury until early in February, when, if they have had a favourable winter and the weather is mild, they may have another shift, the smallest into 6-in. and the largest into 8-in. pots. The next shift must be into blooming pots, and the time will be when the roots have well developed themselves. We find sixteens or 9-in. pots quite large enough for the strongest plants, very good specimens may be grown in 8-in. pots, with the assistance of a little manure-water occasionally.

The compost we use through all the potting stages consists of a rather strong turfy loam, and leaf-mould in equal parts, and another part consisting of well decayed hot-bed dung and sharp roadside sand, all well incorporated together.

Other features of management consist in constant ventilation; regular attention to the application of water, which during December and January must be applied rather sparingly, and never over the leaves; frequent removals of decayed leaves, and gentle stirring of the surface soil; and last, but of the greatest importance, frequent gentle smokings to keep down aphides—don't wait for these to come on to the plants, so that they can be seen, for when that is the case, half the mischief is done. Let fumigation be considered as an integral portion of the routine of management, and smoke gently but often. If the cultivator leaves his plants to get well covered with aphides, and thinks to cure them by excessive fumigation, he will be mistaken, and had better throw them to the rubbish-heap at once.

Redleaf. JOHN COX.

GLOU MORCEAU PEARS: A PECULIARITY.

THE Glou Morceau Pear, which I had hitherto considered to be one of our hardiest varieties, has been singularly affected by the past inclement spring. The trees generally bore flowers in abundance, and a fine crop of fruit appeared to have "set," and commenced swelling. This they continued to do until they had attained the size of pigeon's-eggs, and were some two months' old, when suddenly they fell off, leaving not more than a tenth part of the entire crop. Those which remained afterwards commenced swelling-off more freely.

This is not the peculiarity of an individual tree, for I have been shown the same results in Essex, some twenty-five miles from here as the crow flies, which is a proof, I think, that this variety is not so hardy as many other sorts.

Digswell. WILLIAM EARLEY.

SEASONABLE HINTS FOR AMATEURS.—OCTOBER.

THE long continuance of fine weather during the latter part of the summer has compensated in a great measure for the unfavourable weather we experienced in the early part of the season. The Hay crops were everywhere heavy, and the weather all that could be desired during the making of it. The Corn crops have all been harvested in splendid condition. Beans have been good; Turnips are abundant and fine everywhere; Potatos are a good crop, and are reported sound. With the exception of Apples and Plums, which have been thin in places, all kinds of fruits have been abundant. The season, on the whole, has been a bounteous one, a blessing for which we should feel grateful to an All-Wise Providence.

The Flower Garden now begins to show indications of the approach of winter. Those masses of colour which a few weeks ago appeared so gay and brilliant are now beginning to fade. The amateur should, therefore, give great attention to neatness and order, by removing all decayed leaves and flowers, and keeping the walks, lawns, beds, and borders in the best possible condition. All tender choice plants that it may be intended to save should be lifted out of the flower-beds, potted, and placed under protection not later than the end of the second week of the month. Though the weather may continue mild to the end of the month, it is not safe to leave them out so long. I would strongly advise amateurs who live in the neighbourhood of large towns to plant as many trees and shrubs as they can, without crowding, in their borders—evergreens, where they will thrive, such as Hollies, Berberries, Aucubas, Rhododendrons, Kalmias, &c., or where these do not succeed, a variety of deciduous trees and shrubs. When the frost has destroyed the beauty of the flowers, the whole should be cleared away, and the beds and borders should be dug and planted afresh,—some with hardy bulbs, as the Narcissus, Hyacinth, Tulip, Crocus, Jonquil, &c.; the remainder, with Pansies, Primulas, Alyssums, Aubrietias, Drabas, Phloxes, Hepaticas, &c. As this is a good season to lay turf, I would advise that where lawns are uneven, the turf should now be taken up, and relaid, after levelling the ground.

As soon as there is danger from frost, all tender plants should be placed under protection. The hardier sorts may be put under any temporary shelter, the more tender ones should be placed under glass, either in pits or frames or in the greenhouse. Cinerarias and Pelargoniums for autumn flowering should have plenty of air in mild weather, and be carefully watered when they require any. Cinerarias for spring flowering should now have a liberal shift, and be placed near the glass during the winter months; they must be carefully watered, and kept free of greenfly.

The work in the Kitchen Garden this month is not of great importance. The late Potatos should be taken up, dried, and stored away. The best way of storing them is that which will keep them most effectually dry; a dry cellar or outhouse answers well, if frost can be kept out. Carrots, Parsnips, Beet, Salsafy, and Scorzonera should also be taken up, dried, and carefully packed away in dry sand in a dry cellar or outhouse. All these should be looked over occasionally, to see there is no dampness amongst them. The earthing-up of Celery must be attended to, not only to blanch it, but also to protect it from the effects of frost. Cauliflowers sown in the open ground in August, should now be planted out under hand-glasses, and some should be pricked out into frames for transplanting in spring. When the Asparagus haulm is dead it should be cleared away, and if there be any weeds on the beds they should be carefully hoed and cleared away; the beds should then have a dressing of good manure put on them, and this should be covered with soil out of the alleys. As ground becomes vacant it should be manured, dug or trenched, and thrown up into ridges, to expose it to the influence of the atmosphere.

In the Fruit Garden the gathering-in of Pears and Apples until all are housed must be daily attended to. To ensure their successful keeping, careful handling is absolutely necessary, as is also gathering at the proper time. Experienced fruit-growers can tell at a glance when fruit has reached the state in which it should be gathered, but the amateur, without considerable experience, can hardly do so, though he will not be far wrong if he attends to the rule commonly observed in this matter—that is, to note when the fruit begins to drop naturally from the tree, or to part freely from the stem on being moved. Quinces, Medlars, Walnuts, and other nuts should be gathered during this month.

I would strongly urge on amateurs the advantage of early autumn planting, as this is the best season in the whole year. But to ensure successful results in planting fruit trees, the soil should be well drained if the subsoil is of a retentive character, and the soil of the border must also be improved, if of a clayey nature, by the admixture of substances that will improve its physical properties. When the soil is clayey, the borders should not be made too deep. When the soil is of a sandy nature, and the subsoil porous and gravelly, then little or no drainage is necessary; generally such soils are naturally sufficiently drained, and are improved by the addition of clay, marl, or any other retentive substance. In soils of this description the borders should be made tolerably deep, and plenty of good rotten manure may be put into them with advantage. Whatever the nature of the soil, it should be made fit for the reception of fruit trees before any are planted, otherwise the result will be failure. In amateurs' gardens dwarf trees only, as a rule, should be planted, unless the ground be of a considerable extent. In light sandy soils, Pear trees on the Quince stock do not always succeed very well, therefore, in planting Pears in soil of this description some earth of a clayey retentive nature should be put into the holes about the roots of the trees. The old canes of Raspberries that have produced fruit should be cut away, the young ones thinned, and tied up to the espalier wires, and the ground between should be well manured and dug; new plantations may now be made.

Stourton. M. SAUL.

CHEAP AND BEAUTIFUL LACINGS,

FOR GRAVEL WALKS, TURF VERGES, AND THE FOREGROUNDS OF SHRUBBERIES.

OH yes! these are just what we want! something that will last, and that won't be killed every winter, and that will bring us a glow of beauty every spring or summertide, and whose leaves will be pretty when the flowers are faded,—plants that will stand as edgings in single file, or form charming lines in broad or narrow ribbons,—things of rare beauty,—gems! . . . Stop, stop! We were to write of cheap things. Well, why not? The cheaper the better.

Just look at that glowing line of Thrift, that fringes the light gravel with an aurora so bright that it even illumines the common-place potato-tops on the other side, and raises its purple shadow nearly to the top of the espalier apple trees eight feet behind it. What could be more beautiful? It forms a fringe about a foot wide of the most exquisite colours, and the form is that of the most artistically poised knots of purple, placed exactly the right distance from its lovely green base. And the price? Why, you may buy enough for a shilling to plant a hundred yards the year after. The plants will bear being taken to pieces like a bundle of needles tied together, and every separate piece may be converted into a plant, and become the prolific centre of other plants to infinity. Thus by persistent subdivision any quantity may be manufactured. About four years ago I bought a patch out of a cottage garden, and now I believe I could plant a line in single file from Hardwicke to London. It forms a capital edging in itself, the foliage being so dwarf and dense, of a beautiful green; and as a flowering fringe to box, tile, or stone edgings, it is admirable. There are several varieties. We call ours Armeria grandiflora; it is rather more robust and much higher-coloured than the common Thrift. It flowers from the end of May till the middle of July, and much later if the flowers are persistently removed as soon as they fade. The grand display is in the middle of June, and we have this season had several hundred yards of it, that one never tired looking at. Of all cheap and beautiful edgings, I put this first.

Amongst the next best, I would place Saxifraga hypnoides, one of the commonest and most beautiful of all the Saxifrages. With an equally beautiful and more dense, spreading leafage, the flower-stem rises higher, and the flowers are in shady places of the purest white. In more exposed positions, there is a yellowish tinge in the white of this light and graceful flower. Strong plants of it in single file will occupy nearly a foot in width, and it forms a most effective and charming fringe to any of the positions I have indicated. The plant is perfectly hardy, and may be increased almost as rapidly, though not quite in the same manner, as the Thrift, nor must the subdivision be carried to the same extent. Every cutting of the Saxifrage must be a perfect branch.

Next we come to the Forget-me-Nots. What can exceed these in beauty? And then they have a second beauty laid over the first, in the deep hidden meaning that clusters round the whole family like bees, and gathers the honey—love—from every bending flower. There is, first, Myosotis sylvatica, white and blue, and then there is the far lovelier M. dissitiflora, which lines the earth with a band stolen from the deep blue sky. With care in culture, and skill to increase and multiply such plants, no walk, verge, or shrubbery should go unlaced with blue. However, these plants are not so well adapted for front lines, on gravel, or to be used as substitutes for other edgings, as those previously adverted to.

I will only name one more plant, and I have done,—the Golden Feather, or Feverfew, hardy as our old friend the common Feverfew, beautiful as a golden crown, regular and bright as a well-drilled regiment in new uniforms. This plant will prove one of the most beautiful for lighting up walks, shrubberies, and turf with a line of gold. It stands the winter without flinching, seeds freely, comes quite true from seed, and any two joints will form a new and independent gold feather, to plume its beauty wherever needed.

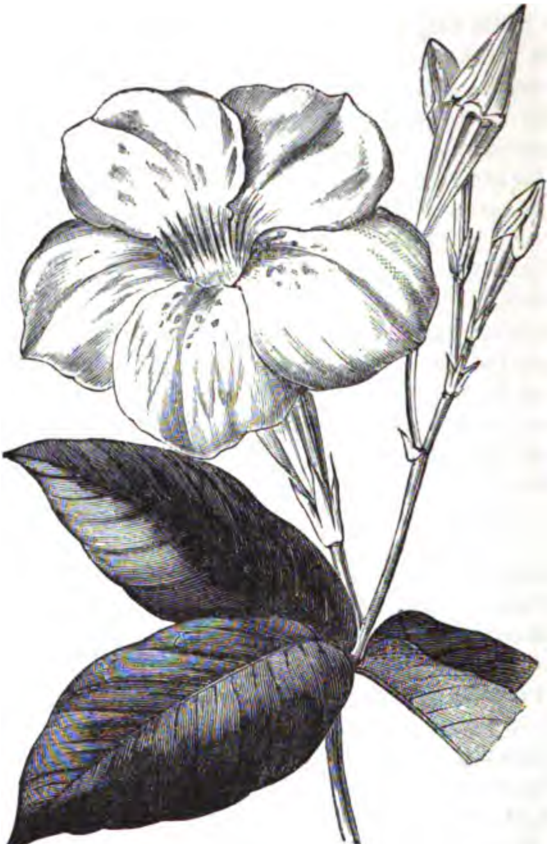
I conclude by tying these four plants together, into a four-banded ribbon or fringe, to be used anywhere and everywhere, and challenge your readers to produce a cheaper, more beautiful, and more permanent band for decorative purposes:—First, the Thrift against the light-coloured gravel. Next the Saxifrage, mixing its spraying flower-stems amid the glowing purple, and reaching back amid the elegant Forget-me-Not. Finally, the Feverfew, throwing all the others up and out against its field of the cloth of gold.

Have I not kept my opening promise, and given a peep at one batch—it may not be the last—of cheap beautiful lacings for dressing up gravel walks, turf verges, or any other positions where such embroideries can be used?

Hardwicke House. D. T. FISH, F.R.H.S.

DIPLADENIA BOLIVIENSIS.

ALLIED in many respects to Dipladenia urophylla, the new species which we now introduce to the notice of our readers is a perfectly distinct plant, and a welcome addition to our stove climbers. It differs from the species just referred to in its leaves, which are less strongly acuminate, and its flowers, which are white, and have a more slender tube. It is, in fact, a white Dipladenia with flowers corresponding in size with those of the species above named.



Dipladenia boliviensis forms a compact climbing glabrous shrub, with slender stems, oblong acuminate smooth leaves of two or three inches long, subterminal or axillary racemes of three or four flowers, which are almost salver-shaped, smaller than in D. crassinoda, and of a pearly white colour, with a golden yellow throat, The plant is of very free-flowering habit, and will therefore be an acquisition. It is a summer flowerer.

We owe its introduction, as that of so many other choice novelties, to the Messrs. Veitch and Sons, of Chelsea, who obtained it from Bolivia through their collector, Mr. Pearce. It flowered for the first time in June, 1868, when it was exhibited, and gained the Royal Horticultural Society's Prize Medal as the finest new plant shown in flower. M.

NEW FLORISTS' FLOWERS.

A MEETING of the Floral Committee was held at Chiswick on the 10th of August, for the purpose of examining the *Bedding Pelargoniums*, some few of which were Certificated. *The Moor, Plutus*, and *Rev. W. F. Radclyffe* in the gold and bronze-zonal section were severally awarded First-Class Certificates. The Moor, which promises to be a finer bedder, is very effective, from its clear colours, a bright yellow-green, with a clear dark chestnut zone; but the leaves are somewhat lobed, which is its chief fault. Plutus is inferior to because greener than The Moor, which it otherwise a good deal resembles. The Rev .W. F. Radclyffe is remarkable for its free compact habit, and for the endurance of its bright yellow-green colour, the leaves being marked with a narrow vandyked zone of clear chestnut-red. The variegated zonals comprised some promising-looking sorts, but they were scarcely sufficiently grown. A First-Class Certificate was given to *Amy Richards*, a most effective bedding variety of the Mrs. Pollock style, raised at Chiswick, remarkable for its bold vigorous growth, and its large, flat, highly-coloured leaves, both growth and colouring being far superior to the older variety growing beside it. A First-Class Certificate was also given to *Sir R. Napier*, a very dark-zoned variety of this group, remarkable for its distinctness. In the silver variegated group a First-Class Certificate was given to *Miss Kingsbury*, a most telling scarlet-flowered variety, of dense compact habit, and having a broad white margin to the leaves, which are of average flatness. A First-Class Certificate was given to *William Underwood*, a variety which would no doubt have received the award much earlier, had it been sent at an earlier date for trial; it is a free-growing and very floriferous sort, with dark-zoned leaves, and close trusses of good-sized fair-shaped orange-scarlet flowers of a very effective character. First-Class Certificates were given to *Advancer* (Bull's), and *Rose of Lee*, both of the rose-pink group. The former is a dwarf green-leaved free-blooming sort, with pure self-coloured bright rosy-pink flowers, and showing every disposition to be a good dwarf bedder; the latter, a vigorous, compact, and erect-growing sort, with faintly-zoned leaves, and dense trusses of small flowers of the colour of those of Madame Barre, elevated on long stout footstalks, bright rose-pink, with white base to the top petals. *Fausta*, a bright rosy lake, and *Claude Lorraine*, a deep magenta, two strikingly beautiful colours, but only just coming into bloom, were greatly admired.

The meeting of the Floral Committee at South Kensington on the 17th ult. added a few interesting novelties. Foremost were some *Gladioli*, from Messrs. Kelway and Sons, Langport. *Cherub*, a pale buff with crimson feather; *Medina*, creamy white with crimson flame, and lightly barred with rose at the edges; and *Accius*, white slightly barred with purple, and having a broad dash of purple on the lower petals, all obtained First-Class Certificates; while *Freemason*, a rosy carmine, with a buff-coloured flame, gained a Second-Class award. Some fine new *Verbenas* came from Mr. Perry, Castle Bromwich, and Mr. Eckford, Coleshill. The former had *Ada King*, a very large round, slightly cupped, white, with faint zone of pink near the eye; and *Thomas Lawden*, a large, well-formed, rosy-pink, with crimson eye. The latter had *Harry Eckford*, a deep crimson, with flat bluntly oblong lobes, and a large white eye; *Eclipse*, a rich crimson-scarlet self; and *Lady Anne Speirs*, a large, finely-formed, and entirely novel variety, with rosy-pink centre, and a broadish well-defined white margin. All these were awarded First-Class Certificates. Messrs. Downie, Laird, and Laing, Sydenham, received Certificates for two *Pelargoniums*, *Lady Hawley*, a semi-nosegay, with good trusses of orange-scarlet flowers, and faintly-zoned leaves; and *Stanstead Rival*, a zonal, with compact bold trusses of well-shaped flowers of a deep scarlet, just perceptibly flushed with a tint rose, lying like a bloom upon the surface of the petals.

A good blue-flowered bedding plant—one that is surer and more reliable than any of the purple-coloured Verbenas—has at length appeared in *Ageratum Imperial Dwarf*, a capital dwarf, compact, and free-flowering variety, exhibited by Mr. W. Chater, Saffron Walden, and to which a First-Class Certificate was awarded. This is, no doubt, one of the best new bedding plants of the season. It is of robust compact habit, 8 in. to 10 in. high, bearing a profusion of large flower-heads of a deep cœrulean blue.

At the meeting on the 7th of September, some fine Seedling *Dahlias* were brought forward. Mr. C. Turner, Slough, was awarded First-Class Certificates for *Toison d'Or*, a bright yellow self flower of fine form and substance; and for *Harvard*, lilac rose, also a self flower, of a pleasing hue of colour and good outline. Mr. George Rawlings, Romford, received a First-Class Certificate for *Aristides*, purplish-crimson, shaded with dark, a flower of fine shape, full substance, and high centre; and the same award was made Mr. G. Parker, Winkfield, for *Queen of Yellows*, a large bright orange-yellow flower of good substance; also to Mr. Burgess, Chelsea, for *William Lund*, a deep crimson-maroon flower of good properties. Mr. Eckford obtained at this meeting a First-Class Certificate for *Verbena Countess of Radnor*, bluish-lilac, well marked in the centre with violet round a lemon eye, distinct and good. Mr. Eckford also obtained a First-Class Certificate for a fine new Hybrid Ivy-leaved *Pelargonium*, *Lady Edith*, having bright rosy flowers tinged with purple, the trusses of bloom of fine size, and the foliage marked with a well-defined zone. Messrs. J. and C. Lee, Hammersmith, were awarded a First-Class Certificate for the fine new autumn-flowering hybrid perpetual *Rose*, *Clémence Raoux*, large, of a pale mottled flesh-colour, and powerfully fragrant, which promises to be an acquisition.

At the meeting on September 21, one of the most beautiful and perfect forms of the *Dahlia* ever produced was exhibited by Mr. Rawlings, Romford, and was awarded a First-Class Certificate. It was named *Royalty*, and was of a bright golden ground-colour, some of the petals slightly tipped with brown, full high centre, and splendid outline. Mr. George Wheeler, Warminster, received a Second-Class Certificate for *Lord Weymouth*, deep buff golden ground, heavily tipped with dull red, a pleasing border flower; and the same award was made to Mr. C. Turner, Slough, for *Alice Gair*, blush ground, heavily tipped with bright rosy purple, good outline and substance, but not shown in the best condition. A First-Class Certificate was also awarded to Mr. Turner for *Provost*, a novel-looking orange-red flower, of good substance and outline.

Veronica Blue Gem, from Mr. H. W. Warren, Salisbury, appears likely to make a capital pale-blue bedding plant, being very compact in habit, and remarkably free-blooming, and it was stated that it had done remarkably well out of doors during the summer. It was awarded a First-Class Certificate. Quite a gem in the way of a bedding *Viola*, named *Perfection*, came from Mr. Jobson, of Rothersfield Park Gardens, Alton. It is said to be a hybrid between V. cornuta and some variety of Pansy. The flowers are horned as in V. cornuta, but are nearly three times the size, and of a dark mauve-purple hue, with some dark lines radiating from a yellow eye. It also received a First-Class Certificate.

Mr. Wimsett contributed a basket of each of Wills's new hybrid Ivy-leaved *Pelargoniums*—*Willsii*, and *Willsii rosea*. The latter was awarded a First-Class Certificate some time ago; the former received the same award on this occasion. The plants were profusely covered with small but showy trusses of bright violet-rose-coloured flowers, and both varieties promise to be extremely useful for house decoration.

R. D.

MONTHLY CHRONICLE.

THE International Exhibition of the Royal Caledonian Horticultural Society, on the 8th and 9th of September, was one of the grandest fruit shows that has ever been witnessed, the country having never previously been so thoroughly represented in one place. The Grapes were more numerous and of a better general quality than at the former Exhibition in 1865, besides which the competition was more purely national. In Pine apples there was no advance evident; while in Peaches, Apricots, Plums, Apples, and Pears, there was a decided falling-off, possibly attributable to the exceptional season, but the tables groaned with the load of that most luscious of fruits—the Grape. The miscellaneous collections were worthy of the highest commendation. In the larger class—20 sorts—in which six competed, the battle for position lay between Stevens of Trentham, Johnstone of Glamis Castle, Thomson of Dalkeith, and Ingram of Alnwick; while in collections of 16 sorts, Mathieson of Tullieallan, Lees of Tynninghame, and Temple of Balbirnie took precedence. The post of honour must, however, be assigned to Mr. George Johnstone, who won easily the principal Grape prize of the day, and who was first in 10 other of the Grape classes, amidst a host of competitors! This unparalleled success goes to show what can be done with young Vines and well-made borders, under skilful management. The effect of the show was greatly heightened by the admirable manner in which the flowering and decorative plants were arranged in the adjacent hall.

—— The International Horticultural Exhibition opened at Hamburgh on the 2nd of September has proved to be successful. The park in which the show was held, some 20 to 30 acres in extent, is beautifully situated on the old glacis, and was admirably adapted for such a purpose, though the show was organized on so extensive a scale that even this space did not suffice. The valley was laid out with winding walks, and groups of trees, shrubs, and flower-beds, the Conifers, Fuchsias, Pelargoniums, &c., being skilfully dispersed so as to give it rather the appearance of a beautiful garden, than of an exhibition-ground. There were many noble specimens of Palms and Cycads; the Bronze Pelargoniums from England were pre-eminent; there was a fine collection of Cactuses, and a splendid assortment of bouquets and cut flowers of various kinds. The fruit department was, however, by far the most interesting section, and here there was nothing to come at all near the British Grapes of Mr. Meredith, who won the Queen's Cup, and of Mr. W. Thomson, who obtained a gold medal, and whose three bunches of Grapes were quite wonderful. We heartily congratulate these gentlemen on their success, notwithstanding that it would appear that the cup at least was intended for other hands,—a laxity of principle in the management which deserves severe reprehension. Mr. Meredith's collection consisted of three very large bunches of Mrs. Pince's Black Muscat, a beautiful set of three bunches of Black Hamburgh, perfect in every respect, with Muscat of Alexandria, Lady Downe's Seedling, Trentham Black, Muscat Hamburgh, &c., all really excellent examples. Mr. Thomson competed with a most perfect bunch of Chasselas Napoléon, weighing 4lb.; a very large bunch of Muscat of Alexandria, weighing 5¾lb., but somewhat green; and a Black Hamburgh, of 3½lb., not quite up in colour, and with the drawback of having been bruised before it was staged. The collection of Apples and Pears was excellent, and there were many good Pines and Melons. The number of visitors is said to have been enormous.

—— The Gardeners' Examinations of the Royal Horticultural Society in July last, gave the following results:—

NAMES.	FRUIT & VEGETABLE CULTURE.		FLORICULTURE.	
	Cert.	Marks.	Cert.	Marks.
GEORGE HASKINS, Chiswick	3rd	360	2nd	625
ALFRED JONES, Chiswick	3rd	580	3rd	400
CHARLES BURLEY, Chiswick	3rd	420	2nd	675
GEORGE DOWNTON, Chiswick	2nd	660	1st	1000
JAMES HUDSON, the Deepdene Gardens, Dorking	1st	1200	1st	1000
W. READ, Royal Gardens, Kew	3rd	390	3rd	425

—— An illustration of the depth to which the roots of plants penetrate was furnished at the show of the Highland and Agricultural Society, at Edinburgh, in July last. The Marquis of Tweeddale exhibited a sample of Oats growing in earth, contained in a glazed case, 6 ft. in depth, the upper 3 ft. consisting of ordinary surface soil, and the lower 3 ft. of subsoil. The top and root progress of these oats was as follows:—April 20th, the points of leaves just appeared above the surface of soil; roots 1 in. down. April 22nd, leaves 1 in. high; roots 5 in. down. May 12th, leaves 3 in. long; roots 12 in. down. May 24th, scarcely any increase in the length of the leaves; roots 2 ft. 9 in. long. On the 7th of June, the portion of the box containing the subsoil was added. June 16th, roots 4 ft. deep, and extending at the rate of 1 in. in 24 hours. June 20th, roots 4 ft. 6 in. deep; plants 15½ in. high. July 7th, roots entering the ground on which the case stood, therefore 6 ft. long.

—— The New Plectopomas, raised by M. Van Houtte, differ so much from their type Plectopoma gloxiniæflorum, that a botanist would have some difficulty in discovering the affinity, though they inherit in a great measure the foliage of the type. In respect to habit, they are far superior; for instead of producing their flowers towards the summit only, the plants become complete floral pyramids, covered from base to summit with large well-shaped flowers of various forms, and of innumerable shades and colours. These and kindred Gesneraceous plants are invaluable for ornamenting the greenhouse during summer and autumn, and in view of them M. Van Houtte asks, why should the amateur leave his cold house empty during the five months intervening between the removal into the open air and the re-entrance of the plants for which it has been constructed, when, with little trouble, he might enjoy the rich and innumerable colours of the various Gesneraceous plants,—plants destined to play an important part in house decoration?

—— It is a matter of surprise that the fine varieties of Lilac now in cultivation, such as the magnificent dark-coloured kinds named Dr. Lindley and Charles X., are not oftener planted in preference to the very inferior older kinds of common Lilac, which they excel as much as the plant usually grown as Persian Lilac, but which appears to be the Rouen variety (rothamagensis), does the comparatively puny-looking type of Syringa persica.

—— The Cannas at Battersea Park have been very effective this season, especially a bed of the dark-leaved *Canna Bihorelli*, which was worthy of all praise. This is one of a new race of Cannas, dwarf in growth, and very floriferous, bearing large and strikingly showy flowers, and which will become extremely useful in flower gardens. *C. violacea superba* is of the same habit, with motley-bronzed leaves, and abundant red flowers. *C. picturata nana*, dwarf and free as the foregoing, has green leaves, and yellow flowers spotted with crimson. Two fine dark bronze-leaved sorts of larger growth are *C. metallica* and *C. metallicoides*—both very telling varieties for foliage groups. *Canna Annæi*, in one place, where it had been left out all the winter, grew from 9 ft. to 10 ft. high, and *C. peruviana* 7 ft. high, both freely blooming. Generally, the Cannas which had not been disturbed in winter, have grown away with remarkable vigour.

—— The following new Picotees, Cloves, &c., should be in every collection, as they are adapted for decoration either in pots or in the garden border:—Turner's Admiration Picotee, a fine large purple-edged flower, which gives a quantity of blossoms, and is of very strong compact habit. Perkins' Prince of Orange Carnation, the finest orange-yellow tree Carnation yet before the public; of good constitution and a free flowerer; indeed, it may be had in flower all the year round. Hodge's Bride Clove, a pure, white, clove-scented, large, bold flower, with occasionally a little tint of flesh-colour; it is particularly free and good; a strong grower, and will force well.

—— Hicks' Hardy White Cos is said by Mr. Edlington to be a most distinct and valuable Lettuce. If it proves as good a winter Lettuce as it has turned out during the summer, its good properties will be considerably enhanced. The spring-sown plants grew to a huge size, and notwithstanding the excessive drought, there was no tendency in this variety to "bolt." Where Cabbage Lettuces are at all in demand, the new French Spotted is undoubtedly one of the best to grow for summer purposes. It grows to a large size when well cultivated, and stands well, without the least tendency to run to seed.

—— To perpetuate Double Stocks, it is recommended, when the varieties are in full bloom, to take off as cuttings the lateral shoots beneath the flowers (before they show bloom), and to prepare and plant them like those of other soft-wooded plants, placing them in a cold frame, and shading them until roots have pushed out freely. In this way it is said that plants more symmetrical in shape, and blooming more profusely than those generally raised from seed, are produced.

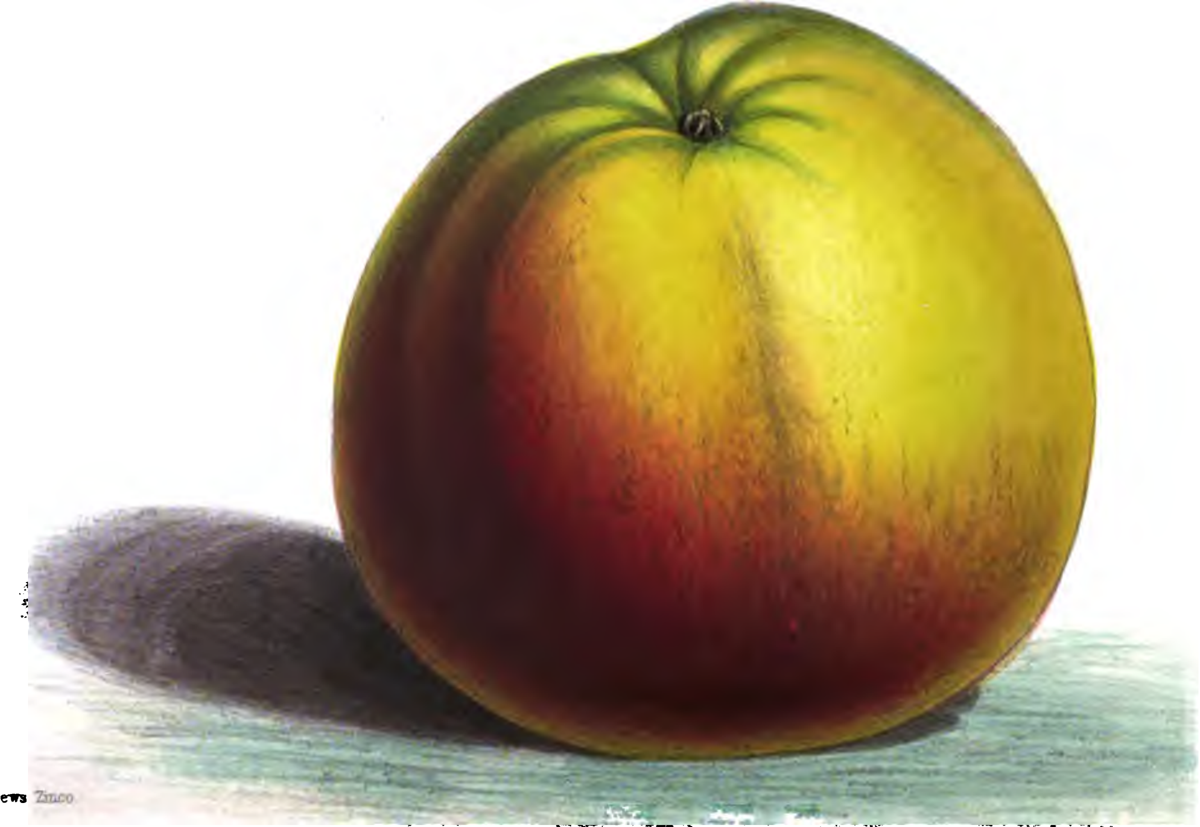
—— Who can say that we have even yet produced *Lilium auratum* in all its beauty. Certainly the specimen shown on the 17th of August at South Kensington by Mr. Goode, gardener to the Dowager Lady Ashburton, Melchet Court, Romsey, Hants, was by far the grandest which has yet been seen in public. This noble specimen was originally bought as a single bulb at the price of three guineas, and has not since been disturbed, but has been potted on as one entire plant. It had this year eleven fine strong-flowering stems, each about eight feet high, and bore on the whole 152 blooms, of which about 130 were fully expanded when exhibited. The specimen was universally admired, no less for its perfect cultivation than for the beautiful condition in which it was shown, not a flower being bruised or pollen-stained, even though the plant had been brought a distance of 80 miles on an open railway truck. This plant was worthily awarded a Lindley medal.

Obituary.

—— **Frederick Scheer**, Esq., died at Northfleet, on the 30th of December last, aged 76. Mr. Scheer was born in the island of Rügen, and the first part of his life was spent in Russia in mercantile pursuits; but when still a young man, he took up his residence in England as a City merchant, and for many years lived on Kew Green, where his well-kept garden and greenhouse became filled with new plants imported by himself; and at that period he had one of the largest collections of Cacti in Europe. At Northfleet he indulged in his favourite pursuits of botany and gardening to the full extent his business occupations would allow. The Gesneraceous genus Scheeria is dedicated to his memory.

—— **Mr. Robert Thompson**, of Chiswick, died on the 7th of September, aged 72. He was born at Echt, in Aberdeenshire, in 1798, and in 1824 entered Chiswick Garden, where for a long period, before his retirement through infirmity about two years since, he held the important position of Superintendent of the Fruit Department. There he acquired a knowledge of fruits and fruit-trees which has probably never been excelled, and which enabled him to produce "The Catalogue of Fruits cultivated in the Garden of the Horticultural Society of London," a most laborious work, and the standard of pomological nomenclature up to the present day. "The Gardener's Assistant," an independent production of his pen, is the best modern compendium of horticulture we possess; while his contributions to garden literature, including our own pages, have been very voluminous and valuable. Mr. Thompson was no less eminent as a meteorologist, the observations at Chiswick having been conducted and recorded by him from 1830 till within a few months of his death. He was indeed one of the most accomplished and useful horticulturists of his time, and one to whom the rising generation is largely indebted. When incapacitated a year or two since by a stroke of paralysis, he retired from the service of the Royal Horticultural Society on full pay. A testimonial fund, which amounted to some £400, was about the same time raised by subscription, in recognition of his services to horticulture.

—— **Mr. James Veitch**, of the Royal Exotic Nursery, Chelsea, died on the 10th of September, aged 54, having been born on May 24, 1815. When a youth he was sent to London for two years for improvement, and afterwards devoted his great energies and abilities to the extension and improvement of the Mount Radford Nursery, which eventually became, through his exertions, one of the first establishments of the day. In 1838 he became a partner in the firm of James Veitch and Son, and in 1853, while still a partner in the business at Exeter,—which had then become famous as the first English home of multitudes of new plants, introduced directly by the agency of Messrs. Veitch's collectors, the brothers Lobb,—he removed to London and took possession of the Royal Exotic Nursery, Chelsea. Here he soon raised himself into a very influential position in the gardening world, and built up a gigantic business, sufficient of itself to form a striking monument of success. In 1865 his two sons were taken into partnership, the style of the firm becoming James Veitch and Sons. To show how far our gardens are indebted to Mr. Veitch would be to write a history of most of the new plants introduced during the last quarter of a century by the Lobbs, Pearce, Hutton, John G. Veitch, and others. Mr. Veitch was a thorough cultivator, and as an exhibitor he has had a large share in making our shows the glorious monuments of cultural skill which they are. He died of heart disease, the premonitory symptoms of which had induced him for the last two years to withdraw from active business. Endued with indomitable energy, and blessed with a clear head and sound sense, he acquired great personal influence, and placed himself in the front rank of horticulturists, while his great-heartedness and keen appreciation of sterling worth, secured to him many personal friends, who sincerely mourn his loss.



Jas. Andrews Zinco.

Harrison's Annie Elizabeth Apple.

APPLE ANNIE ELIZABETH.

WITH AN ILLUSTRATION.

AWARDED a First-class Certificate by the Royal Horticultural Society's Fruit Committee, on the 6th of October, 1868,—such is our authority for recording that the variety of which a figure is annexed is one which merits the attention of the Pomologist. We have to thank the raisers, Messrs. Harrison and Son, of Leicester, by whom it is being distributed, for the specimens Mr. Andrews has so well represented in our illustration.

We learn from the Messrs. Harrison that the examples hitherto exhibited of this valuable culinary Apple have been obtained from the seedling plant, which has been once transplanted, so that doubtless it will be seen much finer when obtained from trees properly worked and cultivated. Its pedigree cannot be exactly ascertained, but it is believed to have been obtained from the Bess Pool. The tree is of upright or pyramidal habit, compact, and remarkably sturdy, the bark smooth, bright, and mottled, and the leaves often acquiring very large dimensions. It is, moreover, an excellent cropper, and the fruit is generally of large size, round in its outline, but widest at the base, prominently ribbed or angular, especially towards the eye, which is large, and deeply set in an irregular angular basin; the skin is pale yellow, suffused and somewhat splashed with crimson on the sunny side; stalk short, deeply set. The flesh is white, firm, but crisp and tender, with a fine brisk flavour. It is commendable for its late-keeping properties, the ordinary season for use being from December to June. Specimens gathered in October have been kept good till the following October, twelve months after being gathered, so that we may fairly state, that it is an excellent late kitchen apple, and we learn that when kept till spring is of very good quality for dessert. By the month of April it acquires a more decided yellow colour, with much brighter crimson markings than is shown in our figure, which gives the appearance of the fruit at the time it comes into use. M.

SEASONABLE HINTS FOR AMATEURS.—NOVEMBER.

THIS is the most disagreeable month in the whole year for out-door gardening, the days being short, and the weather in general cold and damp. The beauty of the garden is gone for the season. The leaves are falling in every direction, necessitating daily attention in sweeping and cleaning up. There are few persons who have not admired the varied and beautiful tints which many deciduous trees present before the fall of the leaf. No grounds should be without some of the more striking and ornamental of such trees, and I would recommend amateurs to take note of and to plant some of them during the autumn; they may be got in considerable variety in all nurseries of any note.

When the frost has destroyed all the summer plants in the beds and borders, the whole should be cleared away, and the ground dug over and planted with hardy bulbs or spring-flowering plants, as directed last month. Tulips and other bulbs not already planted should be got into the ground before the end of the month. Dahlia roots should be carefully lifted, dried, and stored away in a dry place. All the hardy Roses may be planted, and they should afterwards have a good mulching of rotten dung. This is the best season for planting Stocks for budding next year. The roots of Tea Roses, Fuchsias, Salvia patens, and other half-hardy plants, should be mulched with rotten leaves, tan, or dung.

To keep tender plants in health in houses, pits, and frames, particular and steady attention is necessary during this and the succeeding winter months. When plants are exposed during summer to the action of the open air and the variations of temperature, and on the approach of autumn are brought into the greenhouse or pit, the change from the out-door to the in-door atmosphere would injure them, were not the temperature modified and kept as nearly as circumstances will admit like that of the external air. Great care is therefore necessary to preserve plants in health through the winter, particularly for the first few weeks after they are housed. It sometimes happens that when plants that have completed their growth in the open air are housed, they commence a new growth, as if it were spring—to their great detriment, when the proper growing season arrives; this is all owing to bad management. The same thing happens with plants in pits and frames. I would therefore urge on amateurs the necessity of well attending to the following hints:—To give air in abundance, both at the back and front of the houses and pits, when the weather is mild and favourable; to heat the hot-water pipes a little during the day, when the ventilators are open, in order to dry up the damp, in heavy, dull weather—this should not be done at night when the houses are closed, as is too frequently the case; and to water only when absolutely necessary, and then not with a rose, but individually with a small spouted pot, taking care to wet the stages or floor of the house as little as possible. The watering should be done in the morning. Plants in pits and frames must not be left exposed in rainy weather at this season, but every opportunity should be taken to give a plentiful supply of air when the weather is mild and fine.

Soft-wooded plants of all kinds should be frequently looked over, and all decaying leaves should be removed. Hard-wooded plants should have air whenever the weather will permit.

If frost should occur, attention must be paid to the protection of Vegetables in the Kitchen Garden. Cauliflowers in head should be taken up, and laid in by the heels in dry soil, protected from wet. Globe Artichokes should have a good coating of dung around the roots. Celery should be earthed up when dry. Every preparation should now be made for winter. It is a common custom to sow Peas and Beans about this time on a warm border, but they are subject to so many casualties during the winter, that it is much better to sow early in spring, in pots and boxes under glass, and transplant when cold weather is past; those, however, who have not the means to follow this method, should sow now in the open ground. Carrots, Parsnips, and Beet, if not already lifted, should be got up, dried, and stored away. Cauliflower plants in frames and under glasses should have plenty of air in fine weather. All vacant ground should be dug or trenched, when dry.

In the Fruit Garden, the pruning of all hardy fruit trees should be commenced, and as much of it as possible got through before severe weather sets in. As this month is for general purposes the most eligible in the whole year for planting, I strongly advise amateurs intending to plant to get it done as soon as possible, taking care to attend to the drainage and preparation of the borders, as recommended last month.

Stourton. M. Saul.

FRENCH v. ENGLISH GARDENING.

AS compared with French gardens, we find in Battersea Park equally good Musas, better Tree Ferns, and a greater variety of Tropical plants, with all the other French subjects in quantity. There is also—and this is its great charm—a mixture of English flowers, for here and there are beds of the newest and most popular Pelargoniums, as well as ribbons of the most effective of such plants in common use, and these in every way as gay as any to be met with even in the places most noted for such displays. We find here, besides, a feature peculiar to the place, and that is, the effective use of succulents and dwarf varieties of herbaceous plants, never at any time before, to my knowledge, attempted to be made useful in the same way. That they are made so I think no one will deny, and the sooner our friends over the water use more of such subjects the better. Most of their own people with any taste are becoming Canna-sick. Anon.

ENGLISH-RAISED ROSES.*

MY first attempt at crossing the Rose was made in 1843. I crossed three flowers of the Tea-Scented Rose known as Goubault with the Bourbon Rose Souchet, with the view of obtaining a dark-coloured Tea-Scented Rose. Let me call these flowers C, D, and E. C produced a very large pod, which ripened perfectly, and gave 10 large seeds. D produced a medium-sized pod, with 9 seeds of very unequal size, one being very large, four large, and four small. E produced a small pod, which contained 13 small seeds. Of these 32 seeds four only germinated! Three of the plants were curious cross-breeds, of no floral value, and having little in common with either parent; and one, in leaf, habit, and flower was very similar to the wild Dog Rose! I was here, no doubt, unfortunate in the choice of my parent or parents, and regard this issue as an instance of the well-known tendency which the offspring of some cultivated plants have of reverting to the normal form. The same year I crossed about 40 other flowers, but the crop of seed was indifferent, and the result nothing worthy of record.

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* Extracted from a paper on the Improvement of Plants, read before the Royal Horticultural Society at the Manchester Congress, July, 1869.

This non-success led me to submit to microscopical examination the flowers of a number of varieties of the Rose, with the view of ascertaining which were likely to prove the best seed-bearers. The result of that examination is given in the *Rose Garden* (2nd ed., pp. 96, 97). The conclusions I drew were:—1st. That certain varieties are sterile, incapable of forming perfect seeds under any circumstances. Of these I found such kinds predominate as roll the petals inwards, the centre of the flower being quartered in the manner of a crown. In others the pistils were weak or imperfect. 2nd. That many kinds where the pistils are perfect, which in their natural state form seed-pods that wither before arriving at maturity, may be induced to perfect their seeds by artificial fertilization. This class of Roses is the best for him who intends raising seedlings to choose his female parents from, because there is little here to interfere with, mar, or counteract his plans. 3rd. That those kinds which we find seeding abundantly in their natural state are self-fertilized, and that their abundant production of seed is due to this point, namely, the more perfect development of the organs of reproduction, especially the polleniferous parts of fructification.

Thus fortified, I selected some 20 sorts of Roses, planted them in a separate corner of the nursery, and in the month of June, 1846, crossed nearly a thousand flowers. Success in seeding was complete. On the 30th of September of that year I gathered 223 well-ripened pods of seeds, some of them of extraordinary size. Two successive gatherings, of about 100 pods each, were made at intervals of about a month, the whole number of hybridized and crossed pods gathered and stored amounting to 444. The seed was sown the same winter, vegetated during the succeeding spring and summer, and the seedlings bloomed at intervals over the next six years—that is to say, some bloomed the first year, others were six years old before blooming. The result of the hybridizing and cross-breeding was apparent in many cases, but not in all. Two of the most striking and complete I will describe.

I had long thought that a bright dark-coloured climbing Rose was a desideratum, as at that time nearly all our climbing Roses were white or yellow. To obtain this I hybridized the Rose Athelin (Hybrid Bourbon) with Russelliana (Multiflora). Paul's Vivid, a bright crimson climbing Rose, of great repute in its day, and even now sought after, was raised from this effort. Again, I had conceived that if anything could add to the beauty of the Moss Rose, it would be to impart to it the exquisite tint of the R. Alba or Maiden's Blush. To obtain this, I hybridized the Moss du Luxembourg with an Alba Rose, and among the offspring was a Moss Rose, with flowers like the Maiden's Blush, and which was afterwards named Princess Alice.

A few years later I raised from one and the same sowing of English Rose-seed, the Roses Beauty of Waltham, Lord Clyde, Red Rover, Globosa, Princess of Wales, Dr. Lindley, and, I believe, Duke of Edinburgh. Unfortunately in these cases the parentage of the offspring was not preserved.

Waltham Cross. WILLIAM PAUL.

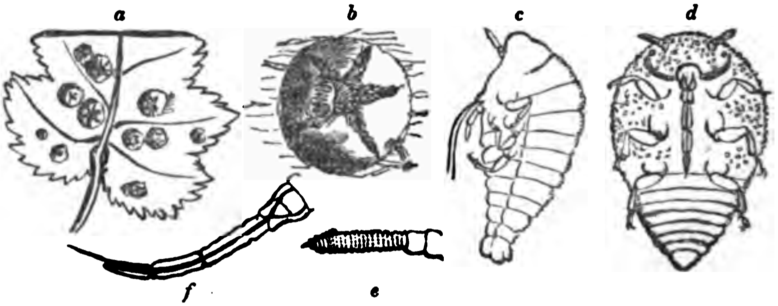
THE VINE DISEASE.

SO long since as 1863, the Vines in certain English gardens were observed to be infested with minute excrescences on the surface of their leaves. On careful examination these gall-like bodies were found to be caused by the irritation arising from the puncture and sucking of the tissues by a minute insect, related to the aphides. Subsequently, in 1867, a disease in which the roots were affected by similar gall-like tubercles was noticed in the *Gardeners' Chronicle.* This latter affection would appear to be the same as that which, under the name of Etisie (consumption), was observed in 1865 in the South of France, and which devastated the vineyards of that country to such an extent that a commission was appointed to inquire into the matter, with the result that the malady was found to be attributable to the presence of a hitherto unknown insect, Phylloxera vastatrix, of which an account has since been published by M. Planchon, in the *Comptes Rendus* for 1868. Whether or no these two forms of disease are attributable to the same insect, has not yet been positively determined; but it is at least believed, that if not identical, the insects which give rise to them are congeneric.

Professor Westwood has given in the *Gardeners' Chronicle* of the present year (p. 190) a *résumé* of his observations, accompanied by figures, from which we make the following abstract:—

> In the autumn of 1867, and during the past year, my attention has been directed to this insect, which appears to have become extensively disseminated, and has exhibited its powers of mischief in a most unlooked-for manner, since not only have further specimens of infested vine leaves been received, but portions of the roots of vines have been sent from different quarters, the rootlets of which had been sucked by a wingless insect, which cannot in any manner be distinguished from those of the galls on the leaves. From Cheshire I received in September, 1867, leaves from a young vine, growing with many others in a house 72 ft. long; it was the only one attacked, having previously made 14 ft. of wood since it was planted in the February preceding, and the insects were only found in the young leaves within five feet of the top. In the following month the same correspondent sent rootlets from his vines, attacked by the same insect. In the latter mode of attack the perfect insect makes a wound in the delicate rootlet, by inserting its rostrum into the wood, and sometimes this is so firmly imbedded as to remain in its position when the insect is removed; decay is thus induced, which penetrates in the form of little cankerous spots, and sometimes extends to the centre, cutting off the supply of nourishment. Diseased specimens have subsequently been received from other correspondents in different parts of England and Ireland.
>
> In the spring of last year (1868) I communicated to the Ashmolean Society of Oxford a notice (accompanied by highly magnified drawings, which are reduced in the accompanying woodcuts) of this insect, which I then proposed to name Peritymbia Vitisana, in allusion to the tomb-like galls formed on the leaves by the females.

The engraving represents at fig. *a* a portion of the upper side of a vine leaf greatly reduced in size, with a number of the gall-like excrescences, also slightly reduced. These excrescences are thickened portions of the leaf, the under-side of each being swollen into a convex shape and entire, the female insect being enclosed within the cell thus formed, the upper surface of the leaf throwing out or splitting into triangular portions, as represented at fig. *b*. The extremity of one of these portions is turned back so as to show part of the body of the female within the gall, surrounded by its eggs. The full-grown insect (scarcely half a line, or 1-30th of an inch in length) is represented on its ventral surface at fig. *d*; its body is swollen and fleshy, and covered with minute granulations; the antennæ (fig. *e*) are short, composed of only two very small basal joints and a longer apical one, having apparently a very minute setiferous tubercle at its extremity, the long joint appearing under the microscope to be formed of a great number of very short rings; the sucker (fig. *f*) is distinct, four-jointed, and varying in length. The insect shown at fig. *d* is a female taken from the leaf-gall, whilst that at fig. *c* represents one of the females from the root seen sideways.



M. Planchon, who has discovered both winged and wingless females, describes the latter as being little ovoid masses, closely applied to the vine roots by their flattened ventral face, the dorsal face being convex. During the first few days after being hatched, the young insects wander about in search of a favourable place to fix themselves, and they generally select an opening in the bark where they can easily dive into the cells of the young juicy tissue. The Phylloxera is distinguished from Aphis by the horizontal position of its wings. Though the winged individuals may serve to extend the range of the destructive pest, yet M. Planchon believes that the wind is the principal dispersing agent, while the wingless individuals are supposed to spread along the surface of the ground to adjacent vines, and then to penetrate to their roots.

As to remedies, a Bordelaise cultivator, quoted by *Les Mondes*, recommends a composition containing sea-salt. M. Naudin, in a communication to the Academy of Sciences, suggests the planting along with the vines of certain herbs or bushes, "several times renewed if necessary, until something may be discovered which may attract the insects from the vines,"—an experiment which may possibly involve a long series of disappointments. A more speedy cure is reported to the *Indicateur Vinicole*, by Dr. Desmartis, in these terms:—"In the vineyard whence I have sent samples of the parasite, there were in the spring 60 stocks attacked with consumption. They were dressed with earth mixed with coal-tar, in the proportion of 8 or 10 per cent. Fifty of these have perfectly recovered, and ripened their fruit, five are doubtful, and the rest have succumbed to the malady." Dr.

Desmartis states that both eggs and perfect insects of the Phylloxera have been also found on the leaves, an observation which goes to confirm the identity of the root and leaf maladies. M.

THUJA LOBBII AS A HEDGE PLANT.

IT may be a wrinkle to many nurserymen and gardeners to know that this fast-growing conifer makes the best of all evergreen hedges. The American Arbor-vitæ is universally used by nurserymen to form hedges to shelter their finest half-hardy plants and shrubs, but Thuja Lobbii (=T. gigantea, *Nutt.*) grows quicker, is more compact in habit, and keeps its fine green colour all winter. A few years ago I raised a quantity of Lobbii seedlings from imported seeds, and having a very exposed quarter in the orchard that wanted shelter, I had a hedge of them planted out. This hedge is now about ten or eleven feet in height, has never been clipped, but is quite compact, and I am glad to see a quantity of small cones on it this year, which, if they produce good seeds, will enable me to raise young plants. For growing into specimens, I likewise believe T. Lobbii will yet be found to be the best of all the Thujas—from its fine habit and its beautiful green foliage.

Having an immense quantity of Cupressus Lawsoniana raised from seeds grown here, I have likewise tried these for making evergreen hedges in the kitchen garden, and they seem to bear clipping well; and being of such rapid growth, they will form a good sheltering hedge in three or four years. This fine tree bears seeds at so young a stage, that seedlings may now be raised as plentiful as larches; it is therefore worthy of a trial for forming evergreen hedges in nurseries and gardens where shelter is wanted.

Welbeck. WILLIAM TILLERY.

EARLY SPRING-BLOOMING SCILLAS.

SOME time since (1868, 206) we quoted some remarks of our contemporary the *Gardeners' Chronicle* relating to the early Vernal Squills, and we now add some further notes from the same source, founded on a collection of bulbs consisting of 14 varieties, communicated by Messrs. E. H. Krelage and Son, of Haarlem. They are all referrible to one or other of the three following species—S. bifolia, S. sibirica, and S. amœna, and the newer forms are seedling varieties of the first named. They are here commented on in the order in which they came into flower, growing side by side under equal conditions. In the several forms of S. bifolia, the bulb varies, yet the differences in that organ are of a much slighter character than those afforded by the leaves, and especially by the flowers:—

Scilla bifolia var. pallida.—This was the pioneer of the group, being in bloom by February 14. It appears to be distinct, the flowers growing in racemes of seven or eight on very long stalks, and of a lavender-blue colour, the anthers being of a dark slaty-blue; ovary slightly tapering at the apex.

Scilla bifolia var. maxima (S. grandiflora maxima, *Krelage*).—In bloom February 17. A very handsome variety, differing from the others in its larger flowers; the leaves, too, are almost as broad as those of S. sibirica, and are bright green; the scape bears a raceme of 11 to 15 flowers, of a rich porcelain blue, the lower ones on long stalks; when expanded, they are nearly an inch across; ovary somewhat rounded at the apex.

Scilla bifolia var. compacta (S. præcox, *Krelage*).—In bloom February 24. This is quite distinct from any of the varieties cultivated under the name præcox, and from its densely-packed flowers may be named compacta. The leaves are comparatively narrow, purplish-green, and with a shorter point than most of the others. The flowers are borne in a dense raceme, and are all turned to one side, the lower stalks not being much longer than the upper ones; the flowers are about half an inch in diameter, of a pale slaty-blue colour; ovary sub-globose.

Scilla bifolia var. metallica.—In bloom February 28. A fine variety. The leaves are rather broad, and purplish at the edge; the scape bears a raceme of 8 or 9 erect flowers, the lowest on long stalks; the flowers are nearly an inch across, with the segments azure blue at the tips, shading off into violet at the base, and having a metallic sheen which renders them very attractive; ovary oblong, obtuse at the apex.

Scilla bifolia var. alba.—In bloom February 28.—Identical with the form cultivated in English gardens under the same name.

Scilla bifolia var. rosea.—In bloom February 28. Identical with the var. rosea of English gardens.

Scilla bifolia var. grandiflora.—In bloom March 6. The leaves are narrow, with purple edges. The scape is 3-flowered, the lowest flower on a long stalk; and the flower a rich cobalt blue, 1¼ inch in diameter; ovary oblong, obtuse.

Scilla bifolia var. carnea.—In bloom March 6. Sent under the name rosea, but has smaller flowers, and appears to be the same as carnea.

Scilla bifolia.—Identical with the plant itself so called in most English gardens. Came into bloom March 6.

Scilla sibirica var. albo-striata.—In bloom April 11. A slight variation from the ordinary S. sibirica.

Scilla amœna.—In bloom April 15. Two slightly different forms of this species were sent under the erroneous names of S. hyacinthoides and S. sibirica.

EFFECTS OF ACCLIMATIZATION.

SPARROWS AND RABBITS.

IT appears from Mr. Tillery's remark (p. 172), that Sparrows have become a pest in Australia. Have they destroyed all the insects, and taken to the crops to prevent starvation? If so, it might be well to establish sparrow clubs, which used to be general in the rural districts of England a few years ago. In one district I recollect the club was dissolved when there were no more birds to kill; but I question, on careful observation, if all the mischief set down to their account could be fairly traced to the sparrows, and certainly not without a counterbalance of much good effected by them. A few years ago the beautiful avenues of trees in the streets of New York and Brooklyn were so much infested with insects, that many were stripped of every leaf, and the passers-by were covered with vermin and filth. The sparrow was imported, and fed, and miniature houses were built in the trees for them to roost and to feed in, and they were taken as much care of as an English lord's tame pheasants. Mr. Sparrow, of course, made himself quite at home at once, and repaid his importers by making general war against the leaf-destroying insects, and now the trees are gaining their original verdure. It has yet to be proved if the birds will become a nuisance at some future date; but I think even a little mischief may be allowed, considering their very great service.

As regards Rabbits, I should have thought the Australian settlers would have been only too thankful there were none in the country, and would not have taken the trouble to introduce such unmitigated vermin. I can only liken such a proceeding to that of the countryman in the fable bringing the almost frozen serpent home to be warmed at the fire, or the patriotic Scot who introduced the national emblem into Canada. One might be disposed in both cases to say, "Served them right!" were it not that the country generally suffers.

South Amboy, New Jersey. James Taplin.

THE EARLY ROSE POTATO.

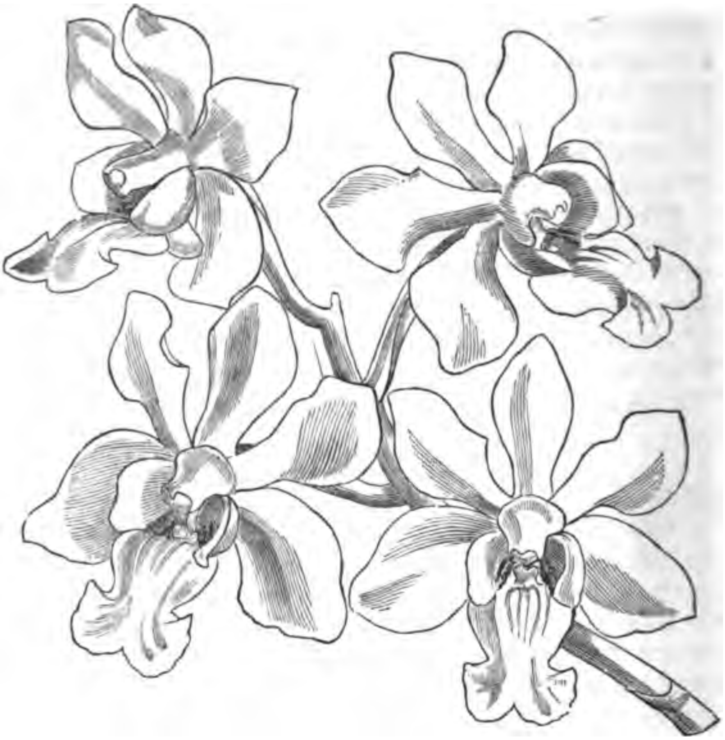
MUCH has been written of late respecting this American variety of Potato, and its productiveness. In April last I purchased 1 lb. (four tubers) of this variety, from which I made 132 sets. The following is the method I adopted. The potatos were cut into halves, planted into small pots, and placed in a cucumber frame. When the shoots attained the length of about 1 in., I gently pulled them off, and placed them singly in small pots, and this practice I continued until I made the quantity stated above; 68 sets were planted out by the end of May, and were totally destroyed by frost on June 1, before they had commenced to tuber. The remainder were planted at the end of June, and from these I have upwards of 100 lb. of tubers, some of them being very large. Some of these were exhibited in my collection of eight varieties that obtained the First Prize at Worksop on September 3, and they were greatly admired. I have no doubt that had my first row not been destroyed by frost, I should have had more than 200 lb. weight from a single pound of tubers. The quality is very good; but, as with other potatos, this will vary according to the nature of the soil.

Osberton. Edward Bennett.

VANDA DENISONIANA.

WE have here a white Vanda, found by Colonel Benson in Burmah, introduced quite recently to the collection of Messrs. Veitch and Sons, and dedicated by Professor Reichenbach to Lady Londesborough, "in appreciation of Lord Londesborough's great and generous love for orchids."

The habit of the plant resembles that of V. Bensoni, but the plant is more vigorous. The leaves are glossy, strap-shaped, with the attenuated apex unequally bilobed. The racemes bear several flowers, of which the leathery reflexed cuneate-oblong sepals and petals are milk-white, pale yellowish-green at the apex, and the broadly pandurate lip is also white, with a stain of yellowish-green at the apex, and another of deep orange round the mouth of the spur. The auricles at the base of the lip are quadrate, while the anterior is bilobed and subhastate, but bearing less resemblance to a heathcock's tail than the lip of V. Bensoni. A peculiar feature is, that the superior limb of the anterior part has a very callous line springing from it, and there are five elevated ridges on the disc of the lip,



and a little bilobed callus at its base; the conical spur is very short, velvety inside, while over against the mouth of the spur stand two parallel oblique rows of brown points. There can be no doubt that this lovely plant will create a sensation among amateurs. We learn from the Messrs. Veitch that it appears to be a free flowerer.

M.

BIGNONIA RADICANS.

HOW rarely one sees this fine old climbing plant now-a-days! I do not remember to have met with it in any place in Yorkshire that I have visited. There is a plant of it here, growing against the wall in the kitchen garden, at the end of a range of Vineries. It is an old plant, and has been in its present place for a number of years. The only attention that is given to it, is to prune it in to an eye, like a vine, every autumn after the fall of the leaves. It is perfectly hardy, having stood the severe frost of December, 1860, without protection, when hundreds of common Hollies were killed to the ground. This plant is a beautiful object every year during the months of August and September, when it is covered with large bunches of its orange-coloured, trumpet-shaped flowers.

The Bignonia radicans is a free and rapid grower, and when encouraged will spread to a great distance, and rise to a great height, in a few years. It is well adapted for covering unsightly buildings. It is freely propagated by cuttings or layers. Old plants also throw up suckers from the roots, which may be taken off and planted at once where they are wanted. When established, the only attention they require is in the autumn or winter to cut away all the small, weak shoots of the former year, and shorten the strong, leading ones to two or three feet. When the plant has filled the space required, all that is then necessary is, after the fall of the leaves, to spur-prune like a vine. It is surprising that this fine old plant, which will stand our severest winters in the open air against a wall without the slightest injury, should now be so little grown. No garden should be without it.

Stourton. M. SAUL.

THE CHILDREN'S GARDEN.

AT the Manchester meeting of the Royal Horticultural Society, Mr. W. E. Bendle exhibited a variety of forms of miniature glass houses, with hollow brick walls, put up without mortar, and roofed with sheets of glass, without any framework of either wood or iron. The patentee offers them for the growth of Seedlings, Salad herbs, and Strawberries, and alleges that Grapes, and even Pine-apples, may be grown in them. What they are capable of accomplishing in that way it is not my intention now to inquire into, but it does not appear to have entered the mind of the inventor of these miniature hot-houses that children would play at Gardening with such handy materials, just as they play now at Housebuilding with a box of wooden bricks.

There are few of us who have grown old in gardening who have not at one time or another been confronted with the Children's Garden, either as a weed or as a flower, in our path. I have bright recollections of young ladies' flower-gardens, where the narrow walks were edged with Box, and coated with yellow sand, and the beds carefully blackened by finely-sifted peat earth, and where many a fine old favourite flower had still its claims allowed; but the great difficulty was how to propagate by cuttings flowering plants that would not otherwise increase, except by the slow process of dividing the roots. What a boon one of these small propagating pits would have been to such a garden,—so easily set up, so easily shifted, and withal so cheap. It makes the wheels of Horticulture drag heavily when the young gardeners are unable to propagate their pet plants, and hence the need of Plant Protectors. In my boyhood I found out this fact, and felt the difficulty keenly, for I was an amateur at twelve years of age, and had a nook in my father's garden for the pursuit of horticulture, long before I got my daily bread by the "harmless art." Very few persons can enter into the feelings of the boy gardener when he first sees what can be done under his glass frame of 2 ft. square—that was the length and breadth of my one-light box; but it turned the pelting rain and pitiless storm aside, and by its aid a slip or cutting from the Pelargonium of a neighbour would strike root rapidly, and become in a few weeks a flowering plant, with all the charms of its being the produce of my own skill and management. A person may buy game at the stall of the "licensed dealer," but what is that to grouse-shooting on a moor at sunrise? Trout, too, are to be had readily at the fishmonger's; but angling for live trout is quite a different affair, and the sportsman's success is never to be measured by the market value of his "creel." I recollect fitting up a boy's rod and line for the river for the first time in his life, and when he had caught a fish he danced for joy on the shingle; his ecstacy was so well acted, that Garrick might have envied him; he did it to the life. One never forgets to the end of one's life the pleasures that gladdened youth; they are literally "a joy for ever."

The Wardian Case is a drawing-room article, and has brought the graceful Fern to the bedside of the invalid in all its loveliness; it has, besides, added a charm to the homes of hundreds, and I see no reason why this cheaper article of plant protectors should not be set to work, not for the garden of the well-to-do man, but for the window-sill of the weekly tenant, and for the flagstone on the top of the brick wall that divides one yard from another, and all this without losing sight of the services they can render to Children's Gardens, where anything in the way of flat earth can be had for plants to root in. As an example of the cost of a nice little glazed brick pit or frame, I may state that for about 8s. one may be had complete, 48 in. long by 18 in. wide, and about 1 foot high at the back, and 8 in. high at the front, and all this with nothing that can ever rot or get out of repair, while the whole thing could be rebuilt when necessary in the dinner-hour. What treasures these might contain of the smaller kinds of hardy and half-hardy ferns in gardens where the rays of the sun can hardly penetrate; and in sunny places what might not one do with early Violets and Fairy Roses, with the idea before one's mind that Tree Violets are sold in pots little larger than a duck's egg, with 6 or 8 full-blown flowers on each plant, and Fairy Roses have been grown and flowered in the soil contained in a walnut-shell. The youthful tenant of such a tenement would learn the nature of plant life from his failures and successes in his school-days, in a way never to be forgotten, and his powers of observation would be sharpened by the risk he is ever running of danger from within as well as from without. For example, when a snail or slug has made an early breakfast of a choice flower, how the boy will feel his wits set on edge to find out where such robber rests at noon, for when Jonah grieved for the loss of his pet gourd he left many imitators! Boys who are ever likely to become gardeners should begin early to plant and sow, and try their hands at propagating, for the longest life is all too short to learn half that they need to know; but next to unwearied perseverance in the way to secure success, is beginning young, for in this way they will learn to love the business, and to excel in it, not for its rewards, but for itself.

Islington Square, Salford. ALEX. FORSYTH.

BOUGAINVILLEA GLABRA.

THIS is a handsome plant for decorative purposes, for even plants of small size will bloom well, if properly managed. Young plants should be grown freely on throughout the summer, and should not be shaded at any time, as it is most important to grow the plants well exposed to the sun, in order to produce stiff, short-jointed wood. For potting this Bougainvillea, use good fibry peat and yellow loam, in the proportion of three of the former to two of the latter, adding a liberal quantity of silver sand. Provide good drainage, pot moderately firm, and place the plant in an ordinary stove temperature. Attend well to watering, and endeavour to keep the plant growing until the end of September, when water at the root should be gradually withheld until the whole of the leaves fall off. After this, merely give a little water occasionally to keep the wood from shrinking. Keep the plant in this state until February, when it should be again started into growth, and if others are started at intervals of three or four weeks, a succession of bloom may be kept up for three or four months. As soon as the plants are out of bloom, give them a shift, and treat them as above recommended. By this treatment fine specimens may be grown in three years.

Somerley Gardens. HENRY CHILMAN.

ON THE PROPAGATION OF DRACÆNAS.

TRUSTING too implicitly to the dicta of science, observes a recent French writer, gardeners had long considered it almost impossible to propagate any arboreous monocotyledons by cuttings. These plants, they were taught, differed essentially from dicotyledons in not producing branches; and how were plants to be propagated which did not give branches? If cut, the head, it was said, would not advance, and if the terminal bud were destroyed, the tree would infallibly perish.

But science is sometimes mistaken, and practice comes in to destroy without remorse the foundation on which some learned theory reposes. In this case, practice vouches that monocotyledons possess, in the axil of their leaves, an eye which, when favoured with nourishment, gives forth a bud, as capable of forming a branch as the bud of a willow. This eye, however, generally remains latent. The whole secret of success is to excite its vitality.

And this, in practice, is thus accomplished :—The stem of the Dracæna is cut into pieces of from 4 in. to 6 in. long, and these pieces being laid horizontally in a hot-bed or a propagating pit, and covered with light soil, push out in a very short time numerous buds, one from above the scar of each leaf. These form young shoots, which, when an inch or two in length, are taken off with a little heel, and planted as cuttings in sandy earth. They are kept rather close, and under such conditions soon produce roots, and form independent plants. The same mode of propagation may be adopted with any plants of similar habit. It is, in fact, often had recourse to in the case of Yuccas. G.

HARDY CLEMATISES.

THE great merit of these plants for flower-garden embellishment has been frequently commented on. Having recently seen several instances of beds planted with the new varieties of Clematis, I can add my testimony to that of those who have pronounced these hybrids to be most valuable acquisitions. From their hardiness, and their adaptability to the many purposes of garden ornamentation, they assuredly merit an extended cultivation; while as additions to our materials for bedding-out, they are invaluable.

In the garden of Mr. Essington, Ribbesford House, Bewdley, there are two magnificent and noteworthy beds which, when I saw them (September 6), were apparently in the height of blooming. It is difficult to imagine anything more strikingly beautiful than they were, or anything that could produce a more gorgeous effect. Being associated with the general arrangement of bedding plants, the superiority of the Clematis was very apparent, the purple bedders being altogether eclipsed by the masses of rich violet purple of C. Jackmani, which is one of the best for bedding purposes.

The beds were round, about 15 ft. in diameter, and well raised towards the centre. In the centre of one bed, which was planted in 1867, a few stakes about 8 ft. in height were placed, and these being well covered with the Clematis, formed a perfect floral pillar, which gave a good effect. The other bed, planted in November, 1868, was equally good. The plants were planted at about 2 ft. apart, and were carefully trained. Some attention is necessary in regard to training, for if the shoots are allowed to become entangled, it is afterwards difficult to get them apart, so as to maintain the perfect proportions of the beds. At Ribbesford this had been scrupulously attended to. The plants are annually cut down, and the beds well manured. The soil they do best in is a light sandy loam, well manured, and liberally watered during the growing season, for on maintaining the plants in a growing condition for the greatest length of time possible, depends in a great measure the continuity of bloom.

The idea is entertained by many that the blooming season of these plants is not of sufficient duration to warrant their adoption for bedding purposes. In this doubt I frankly own to having been at one time a participator, having formed but a vague idea of their capabilities, but I have learned that by judicious treatment the season of flowering may be so prolonged as to do away with any objection on that point. To those who still doubt, I would say give them a trial, for those who have not seen them well done, must find it difficult to conceive the great beauty of these Clematises. The varieties are many in number, and various in colour.

Witley Court. GEORGE WESTLAND.

EPIPHYLLUM TRUNCATUM: STOCKS, TRAINING, ETC.

COMING into flower naturally at the dead season of the year, and continuing in perfection long after being cut, few subjects excel this plant for decorative purposes, whether in hothouses or drawing-rooms. The blossoms are equally useful for bouquets, but for this purpose they must be mounted on wires at the point of junction with the plant.

It is generally taken for granted that the whole of this race of Epiphyllums should be grafted. However well they may grow and bloom on their own roots, they are apt to assume a squatty and inelegant form, and to hide the beauty of their pendent blossoms in a tangled thicket of shapeless growth.

One of the simplest means of preventing this is to plant them thickly over the entire surface of the pot, so as to cover the whole with a series of small plants, instead of having one only in the centre. The result is that each plant supports its neighbour, and, as each extremity would be a flowering shoot, the general effect is as if each pot were filled with a perfect-shaped plant in full blossom. A great objection to this mode of growth is the flatness of outline that it necessarily induces. This may be obviated by using older and taller plants for the centre, and newly-struck cuttings for the sides of the pots. By a wise selection of graduated lengths, an elegant pyramid may thus be formed.

Another mode of securing the same object is to choose any number of different-sized pots, drain and half fill them with compost, and then arrange them from the base upwards, one above and within the other. The inequality of size will thus leave vacant rings for the reception of the plants. A 12-in. pot as a foundation, finished off with a 2-in. crowning summit, arranged either in regular gradation or intermittently, forms a massive unity of singular beauty. The Epiphyllum seems to enjoy these restrictive rings amazingly. The roots hug the sides of the pots with great tenacity, and very soon the entire pyramid is clothed with vigorous growth, and enwreathed with the loveliest flowers. It may be well to add that the furnishing of such pyramids begins at the top, and is completed at the base. The plants thus escape injury or being soiled during the operation of potting. They must also be potted very firmly, and when all is completed have a thorough soaking of water. This ring-culture necessitates at all times careful and thorough watering. Each ring being quite independent of the others for its supply, it must be watered with the same care as if it were a distinct pot. It is very provoking to have a fine mass spoiled for want of attention to this simple fact. One point more needs attention. It is necessary to guard against the possibility of the pots or pans shifting their position when the plants are turned round or removed from place to place. To render this impossible, a stout bar of iron (previously dressed with Stockholm tar, to prevent corrosion) should pass up through the bottom of all the pots. This will ensure stability, by binding firmly into one, the entire structure from base to summit.

Epiphyllums are also peculiarly adapted for the furnishing of brackets and baskets, and for the filling of pockets for the illumination of dead walls. Occasionally, too, they form very pretty dwarf plants, in 6-in. or 8-in. pots, resembling at times tiny parasols, with running streams of the loveliest inflorescence flowing off from each pendent extremity.

Nevertheless, grafted plants are the most popular. This operation raises them at once to a higher level, from which, as a vantage-ground, they can the better unveil their peculiar beauty. The character of their growth and the structure of their flowers alike invite for them an artificial elevation. The ease with which they will take on almost any stock has also favoured the practice of grafting, while it probably may have prevented us discovering the best possible stock. I believe they will grow on any Cactus, but I have chiefly used only two stocks. I hope Mr. Buckley will supplement his valuable paper in *last year's* FLORIST (p. 13) by giving the results of his more extended experience on this very important point.

The Cereus speciosissimus, while one of our grandest Cactuses in itself, seems formed by nature for a support to all the weak members of *its glorious* family. It is distinguished by three of the most vital characteristics of a good stock. It is strong, it grows freely, and it is long-lived. It seems made to carry a burden. It will support almost any weight of Epiphyllum at any desired height with evident ease and conscious dignity. And then it grows with the freedom of a weed, and the vigour of a giant; and who ever heard of its dying? It can scarcely be destroyed, unless by frost; and it will endure a temperature as low as 40° Fahr. with impunity, which is 5° lower than the Epiphyllum likes to be subjected to. The strength of this noble Cereus enables it to scorn the help of artificial props. Worked on the top of this Cereus, the Epiphyllums form beautiful standard or umbrella plants; inserted all the way up the stems, they can be made into nice, narrow pyramids. There is one objection to this stock, more theoretical, however, than practical. Its natural period of blooming is four or six months later than that of the Epiphyllum. Still it never seems unwilling to be forced into growth at the demand of the scion, nor, as far as I have observed, has it ever refused to supply food to meet the wants of its adopted children.

Still, for my large plants I prefer a different stock, which lacks all the robustness and the strength of this grand Cereus. This is the Pereskia or Peirescia aculeata. It roots and grows freely, and unless for stocks, is of no use whatever. The Epiphyllum takes readily upon it, although not so freely as on the *Cereus*. The Pereskia has but little strength in itself; its merit lies in its pliability; it can be twisted and bent in any direction. Hence, for large plants, whether for training over any form of trellis, for enwreathing pillars, festooning girders, or for covering bare walls, the flexibility of the Pereskia entitles it to the first rank as a stock. I have also seen it used for a dwarf standard, but the plants require other support, and it is not equal to the Cereus for such purposes.

Perhaps the best mode of getting up fine plants of Epiphyllum from 4 ft. to 6 ft. high on the Pereskia, is to obtain old plants, no matter how long and straggling they are, to pot them in 12-in. pots in the compost Mr. Buckley has indicated, and then to fix a strong iron trellis on to the rim of the pots. I prefer a trellis of pyramidal shape, 5 ft. or 6 ft. high; but the only points about this, however, that are vitally important are,—that it shall be strong, that it be fixed on to the pot, and not in the soil, and that it be well painted three or four times, and dried very hard. It will have to bear the entire weight of the plant, and, as there will be no opportunity for another coat of paint for many years, every precaution must be taken to guard against the evils of corrosion.

Having fixed the trellis, proceed next to train the stock. Cover the bottom thoroughly first, and then train the stock over the rest of the trellis. If possible, plunge the plant into a bottom heat of 70°, and maintain an atmospheric temperature of from 55° to 65° or 70°. Then, at intervals of 6 in. or a foot all over the stock, and on the ends of every shoot, insert the scions. On the small branches, about an inch long will be large enough for them; on the larger branches larger scions will, of course, be used. Nothing can be simpler than the grafting. Form the ends of the scion into a wedge, cut a small opening into the side or the end of the shoot of the stock, and fix the scion in its place with a spine of the Pereskia, and the operation is complete. In a humid growing atmosphere the scions will take at once. This process of grafting may also be more continuous with the extension of growth, for the scions will take at any period under this tropical regimen, but as soon as the plants are furnished all over, the forcing and forming pressure may be removed, and the future culture glide into that already described by Mr. Buckley. I hardly think, however, that Epiphyllum on the Pereskia will ever bear greenhouse treatment. This stock seems somewhat more impatient of cold than the Cereus; the plants suffer in health and the flowers in brilliancy of colour, if they are subjected to less than 45° of heat. They well deserve, and they do best in, an intermediate house, ranging from 55° to 60°. Under such favourable circumstances, nothing can exceed the gorgeous beauty and elegant gracefulness of these plants. Pyramids 6 ft. high and 4 ft. through, clothed with delicate blossoms from top to bottom, are sights sometimes to be seen, and they are sights to be remembered and admired for ever. Few plants can lighten the darkness and dispel the gloom of the dull winter season so effectually as these Epiphyllums, while their cheapness and the simplicity of their culture bring them within the reach of every cultivator.

Hardwicke House. D. T. Fish.

BLUE HYDRANGEAS.

SOME attention is just now being turned to Blue Hydrangeas, and the c of the flowers assuming this tint. I have recently returned from a t in Ireland, and in the course of visiting some of the gardens that came my way, I found many examples of blue-flowered Hydrangeas, especia in the southern districts of that country. At one place in particular, in coun Waterford, namely, Messrs. Grant's, Kilmurrey, near Cappoquin, there were to seen some magnificent bushes of Hydrangeas, planted—so Mr. Grant inform me—more than forty years since. There were masses of bloom to be seen on th occasion of my visit, but a large proportion of the flowers were beautifully tinte with blue. Oxide of iron largely prevails in the soil in this part of Ireland, an to the presence of that salt, no doubt, may be traced the blue tint in the flowers. This, at any rate, was the opinion of the leading horticulturists of the district. Cuttings taken from branches wholly bearing blue flowers produced only pink blossoms when blooming in pots; but when planted out in the open ground, in the course of two or three years, when the roots began to penetrate the soil, they yielded the blue tint, as in the case of the older plants.

At Muckross, the residence of Captain the Hon. A. Herbert, M.P., on the banks of the Muckross Lake, Killarney, the Blue Hydrangeas were quite a feature in the fine grounds surrounding the house. This was about a hundred miles west of Cappoquin, and yet the same cause was assigned. If the blue could only be retained under any circumstances of cultivation, it would be a real acquisition. At present, it appears to be beyond the range of practical horticulture to obtain this fixity of character. QUO.

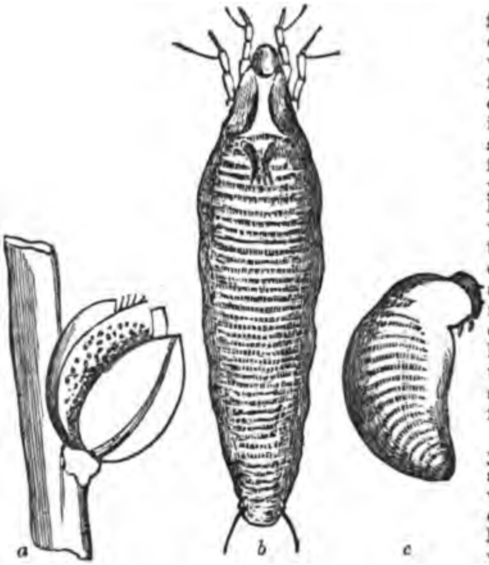
THE CURRANT-BUD DISEASE.

ATTENTION has during the last few years been directed to a disease to which the buds of Black Currant trees are subject in spring. This disease has been traced to the presence, between the scales of which the bud consists, of large numbers of a minute insect, which lives by sucking out the fluid matter of the tissues, thus causing the bud-scales to shrivel, and in this way preventing the development of the embryo bunch of flowers which they enclose. We condense the following notice of this microscopic pest from Professor Westwood's communication to the *Gardeners' Chronicle*, (1868, 641):—

> The Currant-bud insect is of a very unusual form, being long, convex, and tapering to the extremity of the body, whilst the anterior portion is of a more conical form when the head is protruded in walking. The head is distinct and oval. Neither eyes nor antennæ have been observed; and locomotion is effected by means of two pairs only of articulated legs, the penultimate joint of which is furnished with a long bristle on its outer edge. The body is white and fleshy, and is covered with minute points, closely arranged in very numerous transverse rows, forming striæ of granular lines; and it is terminated on either side by a long bristle. In the annexed woodcut, fig. *a* represents a bud highly magnified, with the outer scales partially opened, showing a few of the parasites, which, on an average, are individually not more than 1-200th of an inch in length, and 1-500th of an inch in width; fig. *b* represents

one of the insects very highly magnified, as seen when crawling along; and fig. *c* represents a very young animal when lying on its side in a state of inactivity.

The bristles terminating the body, together with the structure of the legs, rather than the structure of the body itself or the head, indicate the tribe to which the insects belong, namely, the Acaridæ, or mites, where they range apparently in the neighbourhood of the genus Tetranchus, which includes the web-spinning species of the Lime, and also the "red spider" of the greenhouse.



Professor Westwood had received from Blantyre, as late as the beginning of July, specimens of infested buds, with the insects still in their spring four-footed condition. The disease, which was quite general in that district, had been, it was stated, known for 20 years, and after a plant becomes infected very little fruit is to be obtained from it. The young animals have also been observed hatching from their eggs during the winter. It is evident that they retain their four-legged juvenile form for a considerable period, but later they acquire six legs, as was seen in specimens from old buds gathered near the end of October, when some of them had two well-developed bristles at the tail. The young larvæ were at the same time to be found in the buds forming for the next year's crop.

Messrs. Duges and Turpin many years ago published the description and figure of an allied minute insect which they had detected in the galls of the Lime and Willow trees. These had an elongated body, small sucker, with two short thick lateral palpi, and two pairs of 7-jointed legs. These minute animals Duges considered to be larvæ, from the paucity of legs, and he noticed their close resemblance to the Tetranchi found occasionally in similar galls.

The chief remedy in the case of badly infested trees is to prune them very closely in autumn, but this may advantageously be supplemented by picking off the old dried buds in August or September, as it is evident that otherwise the newly formed buds must become infested almost as soon as they are well developed in the early part of the autumn. A dressing of the shoots at that period with a thick coating of lime and soapsuds, to prevent the females from crawling to the young buds, has been also suggested. M.

THE YUCCA.

AS a decorative plant for the lawn, the shrubbery, or the recesses of bold rockwork, the Yucca stands unrivalled. No other plant possesses so distinctive a character, while the exotic appearance of the Yuccas especially recommends them in these days, when diversity of foliage is so much sought after. They are, indeed, hardly ever out of place, and suit any position or situation, whether used as single plants, or as groups, on the lawn, or in the shrubbery borders, in beds, or planted either at the base, the sides, or the summit of rockwork,—in each and all they flourish, look well, appear suitable, and are sure to attract attention. They do not appear to be by any means particular as to soil, as they are growing well at this place in some instances in almost pure sand, and in others in a strong clay loam; but where a compost is purposely made for them, a mixture of the two, with leaf-mould added, would be most suitable. I am not prepared to assert that it may not be best to provide for them a suitable compost in many places, although here we never take the trouble to do so, as they appear to accommodate themselves to any soil or situation.

The Yuccas are very easily propagated by offshoots from the sides of the stems, and may be increased to almost an indefinite extent by cutting the long stems transversely through into pieces of from two to three inches long, and planting these pieces like potato sets. This, however, is a slow process, and the propagation by offshoots is greatly to be preferred, as these generally make good plants the second year. During high winds we sometimes have large side shoots blown off with stems from 18 in. to 2 ft. long, and very large heads; these I plant in a suitable place just as they are, digging a hole deep enough to take the stem and about three inches of the lower leaves, taking care in filling up to ram the earth firmly all round the stems, which is thus rendered almost immovable, so that the winds do not sway them about, which would prevent their rooting. The buried leaves will decay, but in most instances the centre will start into growth after a time, and in a very few years such shoots will form noble plants.

I am here alluding to such sorts as Yucca recurvifolia and Yucca gloriosa, which are grand and noble-looking objects when they are at their full growth. Y. gloriosa will attain a height of eight feet, Y. recurvifolia about six feet, the latter being the most graceful in habit. Some of the sorts, such as Y. glaucescens, and Y. flaccida, rarely form much of a stem, but throw out innumerable offshoots from under the surface soil, and these generally flower much more abundantly than the more robust growers. These dwarf sorts may be readily increased by cutting off the suckers with a sharp spade; they make good plants at once, and often flower the next season. During the present year all the sorts appear to have flowered very abundantly, and when seen from a distance, a tall plant with a fine spike of flowers—altogether something like 12 ft. in height—is a very striking and effective object.

Redleaf. JOHN COX.

NEW FLORISTS' FLOWERS.

THE approach of autumn is materially helping to thin the monthly record of new flowers. At the meeting of the Floral Committee on October 5, a First-Class Certificate was awarded to Mr. C. Turner, Slough, for *Ivy-leaved Pelargonium Compactum*, a variegated form, with something of the character of Duke of Edinburgh, but with a broader edging of white to the leaves, and a more compact habit of growth. A similar award was made to the same exhibitor, for *Tropæolum ochroleucum,* a golden-leaved dwarf Nasturtium, having the foliage of a soft yellow hue, and a good acquisition as a bedder. Mr. Turner has had a line of it bedded out at Slough during the summer, and it has proved most effective, promising even to surpass in usefulness the popular Golden Feather Pyrethrum. The Tropæolum has not only a brighter appearance, but scarcely produces any flowers, so that there is no head of bloom to interfere with its leaf-colouring, as in the case of the Pyrethrum. A new white *Bedding Dahlia, Princess Mathilde,* was produced by Messrs. Downie Laird and Laing, Stanstead Park Nursery, Forest Hill; it appears to be an improvement on the old Alba floribunda nana in point of habit, being a little dwarfer, and more branching.

At the meeting of the same Committee, held on October 19, but one example of a new Florists' flower worthy of notice put in appearance, and this somewhat late, namely, *Zonal Pelargonium Purity,* from Mr. Eckford, of Coleshill Gardens; it is in the way of Madame Werle, but as shown at this season certainly superior to it in the purity of the white, and in the depth and regularity of the carmine centre, as well as in the form and texture of the flowers.

There has been such a rapid and marked improvement in the *Pentstemon* during the past three or four years, that I must claim space to allude to a few of the new seedling flowers of the present year, as it is very difficult to produce the plants at the meetings of the Floral Committee. Messrs. Downie Laird and Laing are quite in the van as regards the improvement of the Pentstemon, and at their Nurseries, both at Edinburgh and Forest Hill, they have this season flowered a fine batch of seedlings. The following eight new kinds, which can be confidently recommended, have been selected from the batch at the Stanstead Park Nursery, viz.:—*Bridesmaid,* flushed with delicate pale rose on a white ground, the interior of the tube primrose, novel, and very pretty; *Grandis,* carmine red, white throat, pencilled with dark; *Stanstead Surprise,* purplish blue, with pure white throat, distinct and fine; *Agnes Laing,* violet rose, pure white throat, very pretty and distinct; *Black Prince,* very dark claret, white throat, pencilled with the same; *Painted Lady,* clear rose, with white throat, marked with crimson; *Mrs. Cator,* bright pale rose, white throat, pencilled with lines of deep rosy crimson; and *Henry King,* very bright scarlet, with white throat, slightly pencilled with dark markings. R. D.

ACANTHUS LATIFOLIUS.

THIS plant, observe MM. Vilmorin Andrieux et Cie., in their *Fleurs de Pleine Terre,* is without doubt only a variety of Acanthus mollis, and is distinguished by the larger development of all its parts. Its leaves are numerous, ample, rising to a height of about 2 ft., and forming when mature tufts of foliage of more than a yard in diameter. Its robust stems attain from 5 ft. to 6 ft. in height, simple or slightly branched, and terminated by a long spike of flowers, these being somewhat more highly coloured than in the ordinary form of A. molle. One of the peculiarities of this plant is to continue growing all the year, flowering from June to August. Lifted and potted in the autumn, its leaves remain green throughout the winter. It is somewhat tender in the climate of Paris, but is one of the most beautiful plants for the decoration of lawns and flower gardens.

Both the name of A. latifolius, and that of A. lusitanicus, under which it is also known, appear to be of garden origin.

We have to thank Mr. Robinson, whose handsome volume on French gardening we have had several opportunities of commending, for the use of the annexed cut, which shows the fine picturesque aspect of this Acanthus latifolius. It is one of those things that will not disgrace any position, and will prove equally at home in the mixed border, in the sheltering angle of a wall, or projecting in front of a shrubbery. Its quality of retaining its leaves till the end of the season is a strong point in its favour; and it is just one of those plants, which if a suitable spot for them can be found, are best planted and suffered to grow on undisturbed. Hence, as it is, moreover, liable to suffer from extreme cold without it is provided with some protection, such a position as the front of a greenhouse or conservatory, close to the sheltering wall, would be just adapted for it. We need add nothing in praise of its beauty, which is well indicated in the woodcut.

M.

MONTHLY CHRONICLE.

FROM the rich collection of Tropical Fruits grown by P. L. Hinds, Esq., Byfleet Lodge, there was exhibited at the meeting of the Royal Horticultural Society, on the 19th ult., a fruit of the Avocado, or Alligator Pear, the first, it would appear, that has been produced in England, perhaps in Europe, though the tree has previously flowered both at Syon and at Kew. This fruit is the produce of Persea gratissima, one of the Lauraceæ, and is much esteemed in the West Indies. The example exhibited was oblong pear-shaped, much like a dark vegetable-marrow, deep green spotted with red outside, hollow, enclosing one large seed, the flesh yellow about an inch in thickness, of a fine buttery texture, but without any remarkable flavour, though not unpleasant. Mr. Carr deserves great credit for producing so fine an example of a fruit which has hitherto baffled our cultivators, though the tree is sufficiently free in growth.

—— Amongst the new Continental Phloxes are some very desirable acquisitions, inasmuch as they are of fine form, and the colour in some cases approaches to scarlet. Of this brilliant group the following are especially fine :—M. Paulmier, rich salmon-rese; Gloire de Neuilly, deep rosy scarlet with crimson centre, very fine; Roi des Roses, rose suffused with salmon, afterwards becoming more rosy; Aurantiaca superba, rich orange-red, with fine crimson centre, a fine flower; L'Avenir, fine bright crimson, of good form; M. de Launay, brilliant rosy red; Professor Koch, brilliant rose suffused with salmon; and Dr. Parnot, pale orange-rose. Amongst the whites occur :—Czarina, dwarf and good; Boule de Neige, taller; Madame la Comtesse de Turenne, very clear, with pale violet eye; Madame Domage, splendid white, with large violet-crimson eye; and Comtesse de Malart, suffused white with large rich crimson centre, first-rate—all first-class kinds. M. Malet, a delicate lilac, is quite distinct, blooms freely, and is very dwarf, not growing much more than 12 in. in height. Of rosy tints, Madame Lemort, bright rose with large crimson centre; Madame Godefrey, rosy purple, very fine; Souvenir de M. Pirele, brilliant reddish crimson, very distinct; Soulouque, purplish lilac; and Comte de Lambertye, rich glowing crimson, are all very fine flowers, bloom freely, and are quite distinct.

—— An excellent mode of applying Sewage Manure has been for some time in operation in the nursery of Mr. Masters, of Canterbury. Remembering how the Chinese utilized their fæcal matters, this veteran horticulturist caused a large tank to be constructed, into which is conveyed through pipes, the manure from the adjacent barrack-yards. This is rendered available for use by filtering the watery particles through a filtering screen, and returning the semi-fluid to the mass in the tank. Preparations of zinc and charcoal were at one time applied as deodorants, but latterly weeds and refuse burnt with the clayey soil in large heaps, have been employed, the dry earth and vegetable ash acting as deodorants, while assisting to form the manure. The tanks are emptied into an area of 2 ft. depth; the surface is covered with this burnt earth, which destroys bad odours, and the whole is in time incorporated into a compost, which proves invaluable for garden purposes. The plan may not be applicable in the case of large towns, and even for smaller ones the first cost of getting a series of such tanks into working order would be considerable, but it would pay.

—— Three New Grapes sent from the Crimea by the Duc de Malakoff, to his friend M. Budler, are being sent out by M. Müller, of Strasbourg. One named Bibier du Maroc, has large roundish black berries, not unlike a Hamburgh, and is said to be good. Another, called Malakoff usum, which has large clusters and remarkably long and large rose-coloured berries, must, at least, be a very handsome Grape, with something the colour of the Ahbee, but of a deeper tint. The third, called the Tschaousch sofra usum, is a large oblong yellowish white sort, described as being of very good quality, and from its appearance may possibly be the Chaouch or Chavoush already known amongst us.

—— M. Armand has lately announced to the French Academy of Sciences the discovery of an Antidote to the noxious principle of Tobacco. A liquor obtained by an infusion of water-cresses, when used for steeping the tobacco leaves, destroys the baleful effects of the nicotine, without altering the aroma of the tobacco, while a draught of the liquor is a sure antidote to nicotine poisoning. M. Armand recommends that the paper used for cigarettes should be soaked in this liquor, to render them innocuous.

—— It is something new to treat the Ixora as an annual. Nevertheless, Mr. Fraser gets seedlings to bloom freely at about one year old, the plants yielding many new tints of colour, no two coming exactly alike. This method of growing dwarf bushy free-flowering examples of the Ixora is worthy of adoption in establishments where plants of this kind are in demand for decorative or for market purposes.

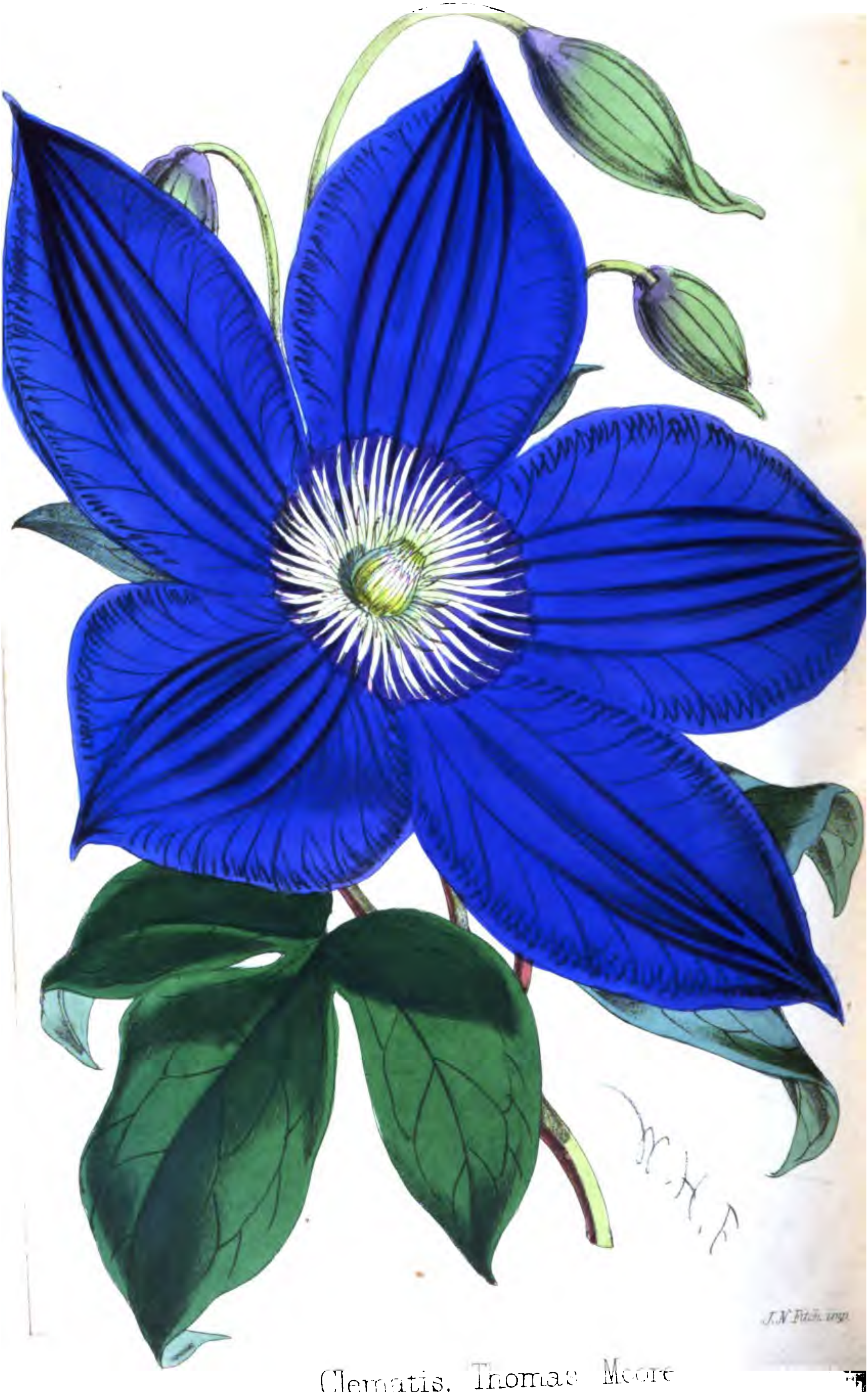
—— The Bouquet which won the first prize at the Royal Horticultural Show at Manchester, was so remarkable for its simple beauty as to call forth general commendations. Much of its effectiveness was due to the sparing introduction of single blossoms of a white-flowered Pancratium, set a little prominent in reference to the other flowers, in which position the narrow recurving perianth segments had a most graceful and charming effect, while the cup was not sufficiently projected to appear obtrusive. This setting-off, we have no doubt, was mainly instrumental in winning the prize.

—— The Pine Beetle, *Hylurgus piniperda,* has been specially mischievous during the past summer. In the months of April and May, the beetles, which have passed the winter in the perfect state, make their galleries of oviposition in the bark of the Pine trees. In six weeks the young brood feed up, and the perfect beetles emerge. In England there is but one brood in the year, and these beetles, emerging in June and July, pass the following winter in the crevices of the bark of trees and other suitable localities; but until the hibernating period arrives they employ themselves in eating out for food the interior of the young shoots of living trees, thus doing irreparable damage. The period to attack the insect, in order to destroy it, is in the spring, whilst ovipositing, and whilst the young brood is feeding up. The bark preferred by the beetle for oviposition is that of trunks felled during the preceding winter. They also attack growing trees, if at all unhealthy. The only practicable remedy is, about the end of May, to remove and burn the bark of all dying trees, in which the beetles are ovipositing, and of all logs of felled timber.

—— Dwarf Coloured-leaved Plants may be made to form summer beds of great beauty when these are well carpeted with their many-hued foliage. In one most strikingly beautiful bed at Battersea, 30 ft. long by 6 ft. wide, were three rectangular masses of the golden-leaved *Pyrethrum,* bordered and connected by a broadish band of the rosy-tinted *Alternanthera amœna,* the outer mass being made up of the orange-tinted *Alternanthera paronychioides major.* The effect was excellent, and equally pleasing whether seen from a distance, or examined closely. Another contiguous bed was filled with the same kinds of plants, but differently arranged. Here there were two diamond-shaped masses of *Alternanthera paronychioides major,* bordered and connected by a broad band of *Alternanthera amœna,* which in addition was made to form a cross band at the centre and a trefoil figure at each end, the whole outer mass being the golden-leaved *Pyrethrum,* edged with a line of *Echeveria secunda.* In another part of the grounds occurred a pair of elongated carpeted beds, consisting of a series of circles of the silvery *Antennaria tomentosa,* with the *Alternanthera amœna* and *Teleianthera versicolor* disposed in scroll-like bands around them, while the outer part was filled with *Alternanthera paronychioides,* with a most effective border formed of a single line of *Echeveria secunda,* which latter, with *Sempervivum californicum,* and one or two other succulents of similar character, comes in well in such positions.

—— The flowers of the pure white Double Chinese Primrose form charming button-hole bouquets. Each flower should be removed from the truss with as long a stalk as possible; a piece of the finest copper wire, 4 in. long, should be passed horizontally through the tubes of the calyx and corolla, the two ends being bent downwards and twisted gently round the stalk of the flowers. Three of these blooms, grouped with four Neapolitan Violets, make up a pretty bouquet, one Violet being in the middle, and the other three at the margin. In place of Violets, double blue or the double pink Hepaticas may be used with good effect. With three of the Double Primulas, a single bloom of one of the double-flowered Scarlet Pelargoniums looks well. For background to these combinations, a small but well-developed leaf of either the Primula or the Oak-leaf Pelargonium associates pleasingly, the latter having the advantage of an agreeable perfume.

—— It is well known that Paint does not adhere well to Zinc, though many means have been tried to obtain their close adherence. "The last we have met with," says the *Builder,* "is due to Dr. Bottger, who professes to have perfectly succeeded. He makes a solution of one part of chloride of copper, one part of nitrate of copper, and one part of chloride of ammonium, in 64 parts of water and one part of commercial hydrochloric acid. This solution acts as a sort of mordant. It is smeared with a wide brush over the zinc, which immediately becomes of a deep black colour, changing in the course of 12 or 24 hours to grey, and upon this grey surface any oil paint will dry, and give a firmly-adhering coat. Summer heat and winter rain, it is said, have no effect in disturbing this covering.



J.N. Fitch, imp.

Clematis. Thomas Moore

TO PROPAGATE DOUBLE STOCKS.

YOUR Monthly Chronicle for October includes a short note on a mode by which to perpetuate Double Stocks. The method referred to is a very old one, although perhaps not generally known. It was practised by my father nearly forty years since, and was published in one of the garden periodicals of that day. I have extracted the following memorandum from his MSS.:—

"I have practised two methods of taking cuttings from Double Stocks, and with equal success in striking them; but I much prefer the one to the other, as I find the two methods produce very different plants. The one I consider the best, is to take the cuttings when the plants are in full bloom. On the side shoots producing the flowers, beneath the existing blossom, another, and frequently two other shoots, are produced. Take off those shoots at the lower joint before they show flower, and with a sharp knife cut off the two lower leaves; insert the cuttings in pots filled with any light rich compost, and treat them as other soft-wooded cuttings. When well rooted, pot them off in pots of sizes proportionate with the progress they have made, and they will make plants equal in symmetrical beauty to any raised from seed, and will flower more abundantly."

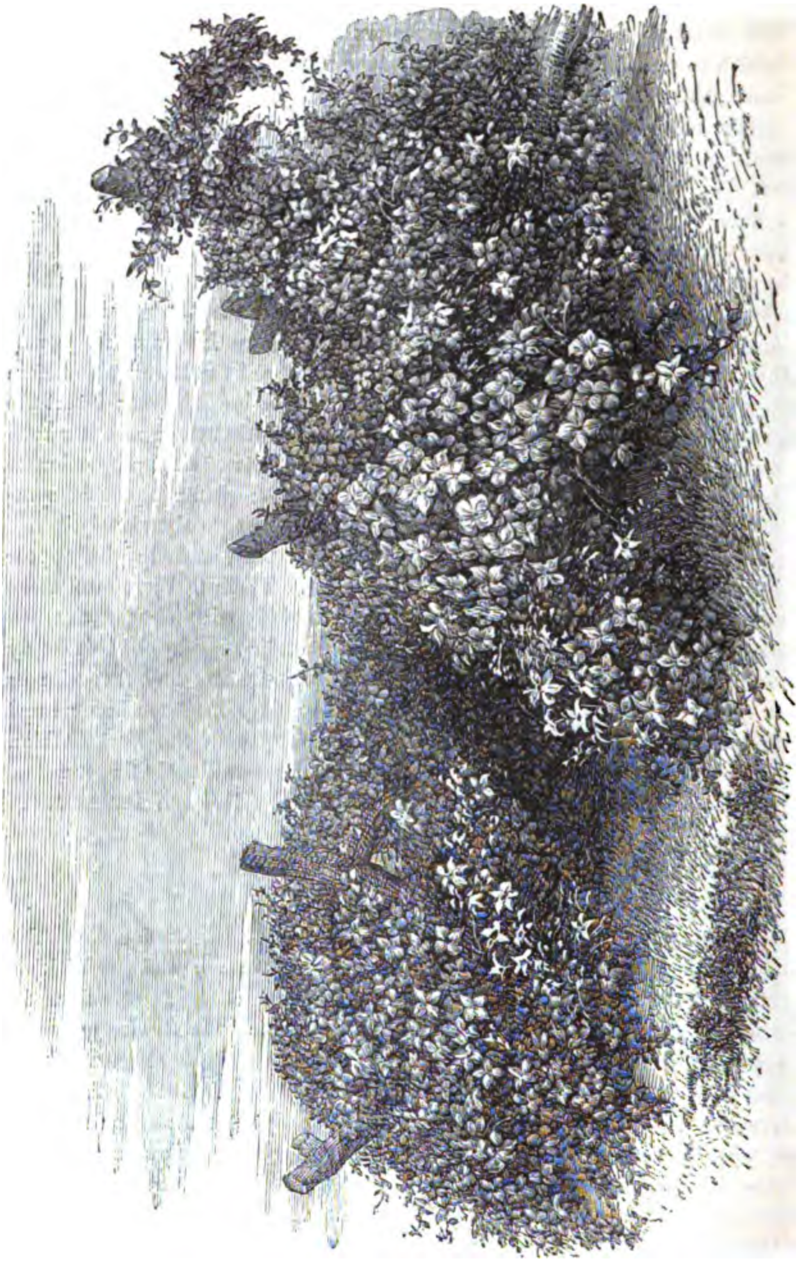
This method of propagating Stocks from cuttings, may, at first sight, appear tedious, but it will not be found so in practice. Besides, there are some advantages to be derived from it, which are not so strictly within our reach when propagating from seed, viz., the certainty of commanding groups of this lovely flower, all double; and the equal certainty of perpetuating any favourite or peculiar variety. This is surely a boon to us in these days of ribbon borders and self-coloured beds, and should be practised, especially with the East Lothian varieties, in order to keep the colours distinct, and to ensure double flowers.

Osberton. EDWARD BENNETT.

CLEMATIS THOMAS MOORE.

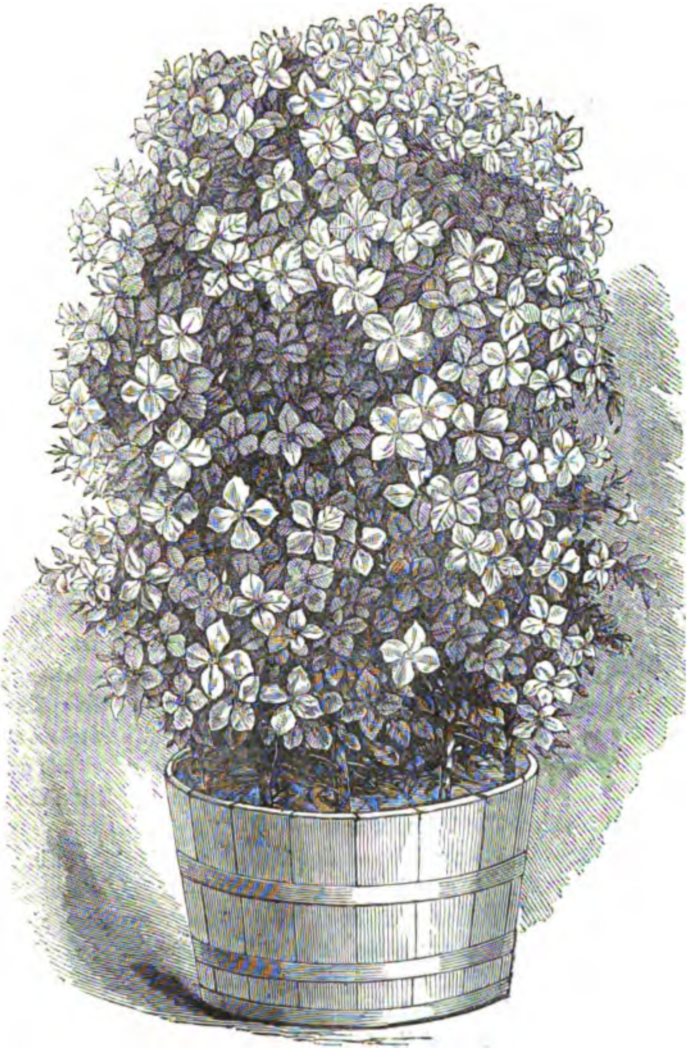
WITH AN ILLUSTRATION.

OF the many beautiful forms of the Hardy Hybrid Clematis for which the lovers of gardens have to thank Mr. George Jackman and the Woking Nursery, that which we now figure is certainly one of the finest. It is, in the first place, the largest at present known, since the flowers measure, when expanded, as much as from 8 to 9 inches across. It is, in the next place, one of the most striking and effective in its colours, which effect results from the large spreading tuft of filaments in the centre being white, so that they contrast strongly with the rich violet hue of the sepals, and give the flowers quite the semblance of belonging to some giant passion-flower. It has the free-growing and free-blooming habit of the other Woking hybrids, and must be set down as one of the best and most distinct of the series.



CLEMATIS JACKMANNI AND OTHERS, AS THEY APPEAR WHEN GROWING OVER TREE-STUMPS, ETC.

Too much cannot be urged in favour of the fine hybrid race of Clematises to which our subject belongs. They are superlatively beautiful in whatever form they are introduced to the garden, whether as climbers for walls or pillars, as bedding plants, as flowering shrubs for rockeries or rooteries, as festoon plants, or as exhibition specimens. We now introduce two illustrations which show their great importance as specimen plants for the terrace or the exhibition-table, and as a flowery furnishing for rooteries or wilderness scenery; while very recently



Mr. Westland has pointed out (p. 254) how admirably they may be introduced as bedding plants, supplying as they do, a colour which is much needed.

Our obligations are due to Mr. Jackman, not only for the opportunity of figuring the magnificent variety represented in our plate, but also for the woodcut sketches which so admirably show the floriferous habit of the plants.

M.

AZALEA INDICA VITTATA.

I DO not think it is generally known that this plant will flower at the end of October without forcing. It has, however, done so with me for the last six years, and I have now a fine plant of it in full bloom in the conservatory. At this season of the year, it will last for at least two months in perfection. The flowers are white, elegantly marked, with purple stripes. It is a strong grower, and a free bloomer. The plant commenced blooming out-doors.

The Gardens, Elmham Hall. WM. SMYTHE.

THE NEW ROSES OF 1869-70.

IN offering the subjoined list of New French Roses, I would beg of my readers to bear in mind that the descriptions are a literal translation from the raisers' lists. Although last summer, as usual, I travelled over all the ground from which these varieties are collected, I saw but few of them in flower. The desirability of bringing novelties rapidly into the market lest they should be superseded, necessitates quick multiplication, and hence the plants are so cut about that they have but small chance of flowering. A distinguished French horticulturist who travels much, and watches the development of the Rose in France, reports to me that he finds the same state of things, adding that, looking upon him as a fancied rival, and a good judge of a rose, the raisers will scarcely let him see their novelties when they are in bloom. The reason of this is obvious, and to which I have often before alluded—if a novelty is good, it will usually sell to any extent without being shown to the many; if indifferent in quality, the less it is shown the better it will sell.

A noticeable feature in the novelties of the present year is that we have two batches of seedlings from that grand old rose Gloire de Dijon, some of which will doubtless take a distinguished position in the future. There are also some white roses, and whites with rosy centres, of which we have still much need; some scarlet and black according to the descriptions, and some new shades of colour. It is to me gratifying to find that many of the raisers are getting away from the "one idea" of looking at the form of the flower only, and are paying a due share of attention to the foliage, habit, and general constitution of the plant. "It rains new roses," wrote a French cultivator recently, and let us hope that as usual there may be some pearly drops that can be referred to in the future as having nourished the taste for this favourite flower.

HYBRID PERPETUAL ROSES.

Abbé Giraudier: reddish cerise, large, full, and of fine form; very vigorous, flowering abundantly. A seedling from *Louise Peyronny*.

Adelina Patti: bright rosy carmine, large, full, and of fine form; flowers freely, habit good, growth vigorous.

Albion: cerise-scarlet, large, full, and of beautiful globular form; foliage fine; growth vigorous.

Alexandre de Humboldt: clear bright rose, the edges of the petals white in summer, large, full, and of fine globular form; growth very vigorous.

Amélie de la Chapelle: delicate flesh-coloured rose, large, full, of fine form and habit; foliage fine, colour new; flowers freely, very sweet, distinct; growth very vigorous.

Auguste Neumann: fiery red, shaded with violet, often mottled with white, large, full, and of fine form; habit vigorous and good.

Baron Chaurand: velvety scarlet centre, shaded with blackish purple, large, full, and of finely-cupped form; foliage fine; growth very vigorous.

Blanche de Meru: white with faint rosy centre when first opening, changing to pure white, of medium size, full, and of fine form; flowers freely; growth moderate.

Candide: rosy white, changing to pure white, of medium size, fine form, and full; growth moderate.

Charles Turner: bright glossy red, very large, full, of finely-cupped form; habit good, growth vigorous.

Charlotte Gagneau: brilliant rosy cerise, colour new, large, almost full; growth vigorous.

Clémence Raoux: blush edged and spotted with rose, petals stout and enduring, blooms late in autumn, very large and full; growth vigorous.

Comtesse d'Oxford: bright carmine-red, shaded, very large, full, and of fine form; growth vigorous; foliage handsome.

Edouard Morren: in the way of *Jules Margottin*, but of a fresher and more delicate colour, of better form, more double, and much larger; growth vigorous.

Elisa Boëlle: white, slightly tinted with rose, changing to pure white, of medium size, fine form, and full; growth vigorous.

Enfant de Chatillon: purplish red, shaded with scarlet, of fine form, full, very sweet, flowers freely; growth vigorous.

Eugène Vavin: bright glossy cerise, very large, of fine globular form; growth vigorous.

Exposition du Havre: dark bright carmine-rose, large, full, and of fine globular form; growth vigorous; foliage fine. A seedling from *Jules Margottin*.

Ferdinand de Lesseps: purple, shaded with violet, large, full, and of fine form; growth vigorous.

Général de Lamartinière: dark rose, the centre vermilion-rose, very large, full; fine foliage and habit; fine form; growth very vigorous.

General Grant: scarlet, strongly shaded with bright carmine, large, and full; growth vigorous.

General Miloradowitsch: fine clear red, slightly shaded with violet, very large, full, and of fine form; foliage fine; growth very vigorous.

Jacob Pereire: brilliant fiery red, shaded with purple, large, and full; growth very vigorous.

Jeanne Guillot: bright satin-like rose shaded with purple, very large and full; form cupped; foliage fine.

Jules Chrétien: bright glossy rose, large, full; form fine; foliage good; growth very vigorous.

Jules Seurre: vermilion-red shaded with bluish purple, centre fiery red, large, full; foliage fine; very vigorous. A seedling from *Victor Verdier*.

La Motte Sanguine: bright reddish carmine, in the way of *Baronne Prevost*, very large, full; growth very vigorous; foliage and habit good.

Lena Turner: bright cerise, sometimes shaded with slaty violet, large, full; form imbricated; growth vigorous.

Louis Van Houtte: reddish scarlet and amaranth, the circumference blackish crimson shaded with bluish purple, very large, full, and of fine globular form; growth vigorous.

Louisa Wood: bright rose, petals large, flowers very large, full, and constant; growth vigorous.

Madame Ambroise Triollet: fine salmon rose, large, full, flowering abundantly; growth very vigorous. A seedling from *Jules Margottin.*

Madame Angèle Dispotte: fine purplish red, the reverse of the petals scarlet, with a bluish shade at the circumference, very large and full; growth very vigorous.

Madame Clorinde Leblond: bright reddish scarlet, velvety, of medium size; growth vigorous.

Madame la Forcade la Roquette: gooseberry-red, a new shade of colour, large, full, and of fine form; growth vigorous. A seedling from *Catherine Guillot.*

Madame Dustour: vermilion-rose, tinted with white, very large, full; form cupped, very effective; growth vigorous.

Madame Elisa Jænisch: blood-red, shaded with scarlet and black, the reverse of the petals violet-red, petals large; flowers large and full; growth vigorous.

Madame Fey-Pranard: pale rose, tinted with white in summer, large; growth vigorous.

Madame la Générale Decaen: flesh-coloured rose, centre deep bright rose; large, full, and of fine globular form; growth vigorous; foliage large and handsome. A seedling from *Jules Margottin.*

Madame Laurent: bright reddish cerise, large and full, beautiful in bud; growth vigorous.

Madame Lefrançois: bright flesh-coloured rose, large, full, and globular; growth vigorous. In the way of *Comtesse de Chabrillant.*

Madame Liabaud: rosy white, changing to pure white, large, full, of fine form; petals large; growth moderate. In the way of *Virginale,* but larger, and more vigorous.

Mdlle. Berthe Baxterais: clear rich bright rose, very large, full, and of fine form; foliage good; growth vigorous.

Mdlle. Eugénie Verdier: bright flesh-coloured rose, the reverse of the petals silvery white, very large and full, of fine form and habit; growth vigorous. A seedling from *Victor Verdier.*

Mdlle. Juliette Halphen: bright flesh-coloured rose, large, full, of fine form and habit; growth vigorous.

Marquise de Castellane: beautiful bright rose, very large and full; form perfect; growth vigorous; flowers freely. A seedling from *Madame Domage.*

Marquise des Ligneris: transparent rose, shaded with vermilion, changing to bright rose, very large, full, of fine form and habit; foliage and growth of *La Reine,* beautiful in bud, and flowers freely.

Maurice Perrault: brilliant reddish cerise, dashed with scarlet, large, full; flowers freely; habit good; growth vigorous.

Newton: bright gooseberry-red, of medium size, and fine globular form; growth very vigorous.

Paul Néron: dark rose, very large, of fine form and habit; growth very vigorous. A seedling from *Victor Verdier.*

Perle blanche: white, blush centre, very large, full, and of fine form; growth very vigorous. Of the shape and size of *La Reine.*

Prince Leopold: beautiful deep red, large, full, the outline smooth and circular; foliage large and handsome; growth very vigorous. A good pillar or wall-rose.

Reine des Beautés: flesh-coloured white, of medium size, fine form, and full; growth vigorous; very sweet.

Reine des Blanches: white, with faint rosy centre, large, full, and of fine form; growth moderate. A seedling from *Victor Verdier.*

Sénateur Chevreau: beautiful bright red, bordered and chased with white, very large, full; growth vigorous.

Souvenir du Prince Royal de Belgique: light red, the reverse of the petals dark velvety red, large, and full; very vigorous. A seedling from *Triomphe de l'Exposition.*

Susanna Wood: fresh rose, large, full, and of fine form; growth vigorous; flowers freely.

Thomas Methven: brilliant carmine, large, full, and of fine form; growth vigorous.

Ville de Laon: metallic rose shaded with silvery white, very large, full, and of fine form; habit good; growth vigorous.

Tea-Scented Roses.

Annette Séant: deep orange-yellow, changing to white, large, and of fine form and habit; growth vigorous.

Belle Lyonnaise: deep canary yellow, changing to white, slightly tinged with salmon, large, full, of fine form and habit; growth vigorous. A seedling from *Gloire de Dijon.*

Catherine Mermet: delicate flesh rose, large, full, fine form and habit; growth vigorous.

Chamois: chamois yellow, of medium size, fine form, full; growth vigorous.

Jeanne d'Arc: pale yellow, of medium size, full; growth vigorous.

Le Mont Blanc: white, slightly tinted with yellow, of fine form, very large, full; growth very vigorous.

Madame Ducher: clear yellow, large, full, and of fine form; flowers abundantly; growth vigorous. A seedling from *Gloire de Dijon.*

Madame Hippolyte Jamain: outer petals pure white, large, centre petals smaller and of a coppery yellow tipped with delicate rose, large, full, and of fine form; growth vigorous.

Madame Levet: yellow, outer petals tinged with violet, large, full, and of fine form; growth vigorous; habit good. A seedling from *Gloire de Dijon.*

Madame Trifle: salmon yellow, outer petals sometimes deep coppery yellow, large, full, of fine form and habit; growth vigorous. A seedling from *Gloire de Dijon.*

Sulphureux: sulphur-yellow, of medium size, fine form, full; growth vigorous.

Tour Bertrand: clear yellow, large, full, and of finely-cupped form; growth very vigorous. A seedling from *Gloire de Dijon.*

Unique: white, edged with bright purplish rose, of medium size, full, of fine form and habit; colour and style new, the flower resembling a tulip.

Noisette Roses.

Lamarque Jaune: golden yellow, of medium size, full; growth moderate.

Rêve d'Or: deep yellow, sometimes coppery yellow, large, full; very vigorous.

Chinese or Bengal Rose.

Ducher: pure white, of medium size, fine form and full; flowers very freely; growth very vigorous. Promising as a free and continuous white bedding rose.

Bourbon Roses.

Madame Just Detrey: vermilion-red, brilliant and velvety, the reverse of the petals paler, large, full, of good form and habit; growth very vigorous.

Mdlle. Favart: fresh glossy rose, lightly bordered with white, large, full, of fine form; flowering abundantly and perpetually; growth vigorous.

Souvenir du Baron de Rothschild: fine reddish crimson, large, almost full; growth vigorous; flowers freely.

Damask Perpetual Rose.

Marie de St. Jean: beautiful pure white, of medium size, full, flowers freely; foliage fine; growth vigorous.

Microphylla Rose.

Imbricata: pale rose, of medium size, very double; form cupped; growth very vigorous.

Hybrid Moss Rose.

Albert Dureau: dark red shaded with light red, large, good habit and foliage; flowers freely; growth vigorous.

Perpetual Moss Rose.

Madame William Paul: very bright rose, large, full, of finely cupped form; flowers freely; growth vigorous. This is said to be the best Perpetual Moss rose yet introduced.

Paul's Nurseries, Waltham Cross, N. William Paul.

RONDELETIA SPECIOSA MAJOR.

THIS is a very handsome evergreen stove winter-flowering shrub, and of easy culture. It flowers from August till December, and if trained as a pyramid, it makes a very handsome and showy plant for winter, and lasts a long time in bloom. It is, moreover, extremely valuable for furnishing cut flowers, so that, altogether, I find it a most useful plant.

It will grow freely in equal parts of fibry peat and turfy loam, with a good portion of silver sand, well mixed; the pots must be well drained. Cuttings may be struck in sandy peat, under bell-glasses, in bottom-heat.

The Gardens, Elmham Hall. WM. SMYTHE.

STYRIAN PEAR.

ALONG with specimens of this highly-coloured autumn Pear, Mr. Hill, of Keele Hall, has sent us the subjoined memorandum, recommending its more extensive cultivation in districts where the tenderer varieties will not thrive. The shape of the fruit is peculiar, and its quality, though scarcely first-rate, is by no means to be despised. It has sometimes been called the Keele Hall Beurré. The pyriform fruit tapers off to the thick fleshy stalk, is of a beautiful citron-yellow, with a bright red cheek on the exposed side, and is in use in the early part of October. The flesh is very buttery, fine-grained, and juicy, and has an agreeable vanilla flavour. It is somewhat remarkable that this useful and handsome pear is not oftener met with in cultivation. Mr. Hill's note is as follows:—"I send you specimens of this, with us, excellent Pear. The fruit is not so large this season, or so highly coloured as we generally have it. When grafted on Citron des Carmes, it comes in fully a month earlier, and is beautifully coloured, but much smaller than on the Pear stock. It is also very good from standards in this part of the country (North Staffordshire), where most kinds of Pears are too tender for the climate."

Keele Hall Gardens. W. HILL.

SEASONABLE HINTS FOR AMATEURS.—DECEMBER.

ALL out-door operations for this month will depend on the state of the weather. As long as it continues mild, planting, draining, turfing, the formation of new beds or borders, and all similar work, should be pushed on as much as possible.

Now the leaves are all off the deciduous trees and shrubs, there should be a general clearing-up of the whole place. Lawns and walks should be swept clean, and then well rolled while dry. All the borders should be neatly dug over, the leaves on them being dug in, and not raked off, as is sometimes done. All the leaves that are swept off the lawns, walks, and other open spaces should be carefully collected into a heap; they will be found useful for covering Seakale, Rhubarb, &c., and for making hotbeds in spring, and when rotten they are invaluable for many purposes. All bulbous roots should now be protected with a covering of litter, leaves, tan, or ashes. Trees and shrubs may be planted in mild weather; if the situation be an exposed one, they should be well secured to stakes, to prevent their being blown about. Many kinds of Thorn are very ornamental, and should be more extensively planted than they are. No place, however limited, should be without Paul's double crimson Thorn. Roses may be planted in mild weather, and the standards should be well secured to stakes. Flowers in the open border will now be scarce, but there is one plant, the Helleborus niger, which makes its appearance about this time, and which is on that account called the Christmas Rose; this, which should be in every garden, delights in a deep, cool, strong soil, but to have the flowers in perfection, a handglass should be placed over them to protect from frost and rains; it is a plant easily increased by division of the roots.

All tender plants, in pits, frames, and houses, should, during this and the following months, be kept at rest as much as possible. A safe rule to observe is to give air at every favourable opportunity; to protect well in frosty weather; and to water only when absolutely necessary. Cinerarias and Primulas coming into flower should be kept at the warmest end of the Greenhouse. Chrysanthemums will now be in full flower, and the collection should be looked over, with a view to exclude all the inferior varieties, since there are now so many beautiful kinds. This is a good time for amateurs, who are fond of these flowers, to visit the nurseries where they are extensively grown, and to select, whilst in flower, the kinds they may like best.

In the Kitchen Garden, the various operations of cleaning, draining, digging, and trenching should be proceeded with, when the weather is favourable. In frosty weather manure should be wheeled on to vacant ground, and to all other parts where it may be wanted. Celery should be protected with a good covering of dry litter, during the continuance of severe frost. Parsley should also be protected with a frame and light, or with some temporary contrivance. Cauliflowers in head should be taken up and laid in by the heels; also Lettuces and Endive. When there is an appearance of severe frost setting in, some Turnips, Parsnips, Jerusalem Artichokes, and Horseradish should be taken up and placed under cover, for use during its continuance. Broccoli plants should be laid down with the heads facing the north; they will then be more secure against frost and snows, than if left standing upright. Potatos and Onions in store should be occasionally looked over, and any which show symptoms of decay should be removed.

The planting of fruit trees, if not done last month, may be proceeded with during mild weather. The list of fruit trees given at page 12 will be a guide for amateurs what varieties to select. I would caution them against planting weakly-growing kinds, and all shy and uncertain bearers. It is a great disappointment to any persons, but particularly to amateurs, whose gardens are often small, to plant a fruit tree, and after waiting some years, to find the variety either a weak-growing tree or a bad bearer. Fresh plantations of Raspberries may still be made. Cuttings of Gooseberries and Currants may now be made, and planted in rows a foot apart. The pruning, training, and nailing of all kinds of fruit trees should be proceeded with in open weather, as it is very desirable to get as much of this work completed as possible before spring, when so many pressing operations, which cannot be postponed, demand attention. Vines under glass should not be exposed to severe frost, as it would seriously injure them.

Stourton. M. SAUL.

BELLADONNA LILIES.

NOTWITHSTANDING the denunciation in the *Cottage Gardener's Dictionary*, to the effect that "*all bulbs* which flower without their leaves are *objectionable*," I must put in a claim for the Belladonna Lily as being not only not objectionable, but very highly to be desired, for its great beauty, and for its real usefulness. During the month of October, when cut flowers from the open air are apt to partake of a common character—I use the word "common" not in derogation of the flowers themselves, for in this sense no flowers are common even if plentiful, but in regard to the estimation in which they are held, because they are to be found in most gardens—this possesses a most redeeming character, being not only chaste and beautiful, but very uncommon. It is for this reason that I have thought it desirable to call attention to it, believing it to be not so much known and appreciated as it ought to be. Its culture is, perhaps, the most easy and simple required by any plant we have under our care, and it is just this—After Careful Planting, LET IT ALONE. Give the foliage free scope for growth, and don't disturb the roots more than once, or at most twice, say, in a quarter of a century.

It may be asked what I mean by careful planting, and to reply, I must enter a little more into detail; and, as I have for some years been experimenting with these Lilies in various situations, I feel in a position to write something about them. There is at the present time, in front of a greenhouse at Redleaf, a narrow border about 30 ft. long and 18 in. wide, planted thickly with Tea-scented Roses. Some twenty years ago, I took up a few patches of Belladonna Lilies, which I found in the border, and planted them in all the intervals between the roses, and in this small space, after cutting about 60 spikes, I find there are 120 spikes now (October) in bloom, with several more coming on. In another situation, at the base of a south wall, five bulbs were planted twelve years ago; they have not been disturbed, and to-day there are 19 spikes in full bloom in a space of one square foot. In the former case, where they are planted among the roses, the want of foliage is not felt, because they shoot up through the green branches, and form very beautiful and striking objects, being in full beauty at a season when other things are waning.

Now, no one must conclude that effects like these can be produced in a single season, though it perhaps might be done with imported flowering bulbs. I am alluding to bulbs which have been well established in their places for a number of years, and it requires several years to get them to flower in such profusion. Much also depends upon the temperature of the autumn. I have known hundreds of spikes killed down by an early frost; but this rarely occurs to such an extent as to be really injurious, and in five years out of six, at least, a good show may be calculated upon.

I before observed that I had experimented upon them in various ways, by which I mean that I have tried them in all sorts of situations, all over the place, wherever I could get a sheltered nook or situation open to the south. They live and grow in a north aspect, but they will not flower, for they require the extreme heat of the summer sun to set the bloom. I have, therefore, planted them at the base of south walls, in borders running along the front of greenhouses, and in the nooks and angles of rockwork open to the south. I have seldom made any great preparation as to compost, as I do not think they are very particular about that, "provided always" that the drainage is perfect. I don't expect they would grow in clay full of water; but if the clay were mixed with sand and vegetable mould, and thoroughly drained, they would do well.

Thus, then, what I mean by careful planting, is to secure a thoroughly efficient drainage, on the principle that where drainage is really efficient, extreme cold has less power of injury, and extreme heat more power for ripening the bulbs, and inducing a flowering habit. I had almost written that the compost is immaterial, but I must qualify that. I have planted them in light sandy soil, in stiff loam, and in common garden soil, without any preparation; and my opinion is that an admixture of loam, peat, leaf-mould, and sand in equal proportions would be a compost in which they would flourish most luxuriantly. They must be planted at least 6 in. deep—7 in., or even 8 in., is not too much in cold localities—and the foliage must be retained until it dies away naturally, for if cut off whilst green, there will be no flowers.

Redleaf. JOHN COX.

THE NEW PELARGONIUMS OF 1869.

IT is fitting that, at the close of a season, a review should be made in order to ascertain what that is really good has been added to the lists of any one flower ranking high in the estimation of the florist. That the Pelargonium does rank high is a fact beyond dispute; and it is equally certain that it is among the most beautiful of the summer-blooming plants that play so distinguished a part at the great floral exhibitions.

The honoured names of Beck, Foster, and Hoyle are yet among us, and those who bear them are busy in the task of improving that flower, to which, through a long number of years, they have devoted especial attention. None of Mr. Beck's new flowers have been exhibited during the past summer. For some reason or other, Mr. Wiggins has discontinued presenting them in public, apparently preferring to rely on a reputation that has been deservedly great through a long series of years. Mr. Beck has a large group of new flowers of the present year, and of these six varieties stand out boldly as acquisitions, viz. :—*Bacchus*, rose ground, lower petals heavily painted, the dark maroon top petals with regular pink margin, white throat, the flowers large, bold, and of fine shape; *Dove*, a large pure white flower, of very fine shape and substance, the large dark blotch on the top petals lit up with fiery carmine and edged with pink; *Firefly*, bright red, having a dark spot on each petal, dark top petals, fine shape, and remarkably free-blooming; *Hebe*, lower petals pink, spotted with dark chocolate, dark top petals margined with pink, flowers large and bold; *Rosea floribunda*, rose lower petals, with large white throat, large dark blotch on top petals, margined with lively rose, flowers large in size, and of good shape; and *Victoria*, a fine and striking flower, salmon-rose lower petals, large white throat, dark top petals, lit up with vermilion, and edged with deep rose.

Some of the best of Mr. Foster's flowers, or rather those that have taken honours during the past season, are not to be distributed till next year. Of those Mr. Turner will send out, four are of very fine quality, and have received First-Class Certificates, namely:—*Corsair*, bright purple, with pure white throat, very dark top petals, lit up with orange-red, dwarf habit, very free and pleasing, and altogether one of the finest new flowers of the year; *Her Majesty*, lower petals pale pink, small black blotch on top petals, large clear white throat, fine shape and quality; *Heroine*, a large and beautifully formed flower, lower petals soft rosy pink, top petals marked with maroon spots and a margin of orange-rose, large white throat, free, and yet dwarf in growth; and *Maid of Honour*, light rosy pink, small dark maroon blotch on top petals, lit up with orange, large white throat, a fine and bold exhibition variety. Three other good flowers of Mr. Foster's raising are also to be sent out with the foregoing, viz.:—*Attraction*, soft rosy lilac, small maroon spots on lower petals, large clear white throat, a novel and pleasing flower; *Harold*, lower petals deep orange-rose, heavily painted with dark, glossy black top petals, with regular narrow edge of rosy crimson, free blooming, and of good habit; and *Plantagenet*, light rosy pink, upper petals rich maroon, with margin of orange rose, white throat, a large and bold flower.

Of Mr. Hoyle's flowers, Mr. Turner will distribute a set of nine, two or three of the most distinct being held back, no doubt, from want of stock. Of those to be sent out, three have received First-Class Certificates, viz.:—*Bonnie Charlie*, lower petals rosy crimson, the top petals black, with a thin margin of crimson, and contrasted by a large pure white throat; *Gratulation*, rose lower petals, glossy maroon top petals with black spot, shaded with crimson, and margined with pale rose, pure white throat; and *Velutina*, one of those pleasing purple flowers so useful on the exhibition stage, the lower petals pale purple with small dark spot on each, black top petals with indistinct verge of purple, white throat, fine and smooth. The others composing Mr. Hoyle's batch are:—*Claribel*, pure white, with small spot of the brightest carmine on the top petals, a very pleasing and distinct flower; *Cycle*, lower petals rosy purple, dark maroon top petals, with margin of rose, and white throat; *Jerome*, fiery orange lower petals, heavily overlaid with dark veins, black top petals with narrow edge of fiery deep rose, a fine dark flower; *Llewellyn*, rich deep crimson, with dark maroon upper petals, a fine glossy flower; *Marion Wilkie*, pale rosy pink, with dark spots on top petals, and white throat, large and showy; and *Regent*, lower petals bright crimson, dark top petals margined with bright carmine, fine shape and substance.

Probably the grandest lot of Fancy Pelargoniums ever sent out is announced by Mr. Turner this autumn. They form a batch of six varieties, all of Mr. Turner's raising, and every one has received a First-Class Certificate; they are:—*Agrippa*, white, with large pale lilac spot on top petals, and smaller spots on the lower petals, very free, of fine form, and quite distinct; *East Lynne*, lower petals white, heavily marked with crimson-purple, top petals bright crimson shaded with violet, large white throat, and fine shape; *Excelsior*, a fine dark rose self-coloured flower, with large white eye and margin, very smooth, and finely formed, altogether first-rate; *Lady Carrington*, soft pale peach lower petals, the top petals suffused with pale pink, clear white throat; *Leotard*, a very fine bright cherry-rose self-flower, with large white centre and margin of the same, a flower of great substance and smoothness; and *Marmion*, an equally fine flower with the foregoing, bright deep rose shaded with purple, clear white throat and narrow edge of the same, large and bold. In point of habit it may be truthfully said of each of these fine fancy flowers, that they are vigorous growers, and yet compact in habit. The foregoing, with *Princess Teck*, *Brightness*, *Fanny Gair*, and *Mrs. Alfred Wigan*, of last year's batch, will give an entirely new character to the exhibition stage. It is to be hoped that ample opportunity will be offered in the future for seeing these grand new kinds worthily represented at the great flower shows, the whole of which are surely not to be entirely lost to us.

The new Zonal, Nosegay, and Variegated Pelargoniums have been touched on as they have put in appearance. They are comparatively few in number as compared with last year, and it is well there should be an occasional respite from the almost continual recurrence of forms cast after the same fashion. But one new Variegated Zonal Pelargonium has put in appearance having any claim to high character, namely, *Mary James* (James), and this was seen in a very young state. In the class of Hybrid Nosegays, grand additions have been made, especially in point of form, so much so that the line of demarcation between a Nosegay and an ordinary Zonal Pelargonium will soon be altogether obliterated.

Quo.

IRESINE LINDENI.

OF the new Iresine Lindeni I forward a few leaves to show its colour and markings [—beautifully coloured and well developed, about 4 in. long]. It was planted out in an exposed place in the last week of June, in common garden soil, without any preparation whatever, and it has grown with great vigour, and withstood all kinds of weather admirably. I planted around it some of the bronze Pelargonium, Beauty of Calderdale, and this little batch of plants has been greatly admired by many persons for its fine effect. When the wind blows sufficiently during sunshine to move the foliage, the Iresine appears at once to put on a new charm, for it exhibits various shades of colour, which are, moreover, very much heightened by those of the Pelargonium. I have been so much pleased with it, that I shall grow it largely another season; and when it is within the reach of all cultivators as to price, I think it will become a thoroughly popular and useful bedding plant.

Lillesden, Hawkhurst. THOMAS RECORD.

PORTABLE AND CONVERTIBLE GLASS SCREENS.

A FIXED Glass Screen is a house, neither more nor less. It may be wide or narrow, flimsily put together, or substantially built, but its fixity converts it into a house, and removes it from the category of temporary expedients to fight the cold at its coldest, and to be cast aside when the warmth of summer renders it no longer needful.

Throughout the greater portion of these islands, our superior wall fruits do as well or better, during nine or ten months of the year, without protection as with it. Hence the importance of a portable shelter that can come and go at the shortest notice, and be as perfect à protection as possible while it remains. In this particular, nothing has yet been found to equal glass. The fact of its being water-proof and air-tight, constitutes it the best wall of division between the trees and the external air. The trees under cover of the glass can laugh at the power of the storm, and defy its piercing force. This free outlook into the sun-light, and the barrier it sets up to the ingress of wet and cold, constitute the chief merits of glass as a tree-protector. The self-same qualities —transparency and impenetrability—that shut out cold, let in and keep in a maximum of heat. It is in these qualities that the immense superiority of glass over opaque protectors is seen and felt. The latter, indeed, shut out cold in the exact ratio of their thickness and conductive powers; but they shut out the heat with the self-same force, while no sooner are they wetted than they become active sources of cold—ice screens, robbing trees and walls alike of all their stored-up caloric, until an equilibrium of iciness is established between them. These characteristics reduce the protective force of such screens as canvas, bunting, straw bands, mats, nets, &c., to the lowest minimum, while their permeability opens a myriad doors of admission for the cold external air to rush through upon the trees. Glass is a perfect antidote against any such loss of heat; its lucid transparency tempts every ray of light and every fleeting vibratory wave of heat through from the outside to the in, and both living tree and dead brick lay themselves out to entertain and fix the genial visitors. It is thus that the superlative importance of glass screens becomes manifest. They work to warm the whole of the protected area, and all it contains. It is on the surface of the glass that the fiercest fight for victory takes place between heat and cold (using the terms in a popular sense), and it is just here that such assistance might readily be given, as to bring the former off an easy victor.

We have glanced at the strong points of glass protectors, let us now look for a moment at their one weak place. Transparency is their chief merit, but it is likewise their greatest demerit. It is a law of transparent bodies in general, and of glass in particular, that heat can be spirited away through them by what is termed radiation,—that is, nature's perpetual struggle after an equilibrium of temperature. There are two obvious methods of counteracting this force of radiation. One is by the creation of an internal source of heat, to glut to satiation this greedy robber of caloric, and yet generate a sufficient reserve for protective purposes; but this mode is expensive. Another is to baffle the thief on his own ground, by hiding the transparent face of glass by an opaque covering. The thinnest bunting or canvas spread over the outside—or, better still, the inside—of glass, would neutralize the powers of radiation, and it is surprising that this check is not more generally used.

But ready portability is one of the first characteristics of all good wall tree-protectors. Their value may be said to sink or rise in proportion as they are portable or otherwise. Fixed protectors induce tenderness, and thus, while they work to exclude the cold, they render the tree susceptible of equal injury by a less amount of it. Hence the common saying, that protection does as much or more harm than good. Hence, also, the various modes, by pulleys, cords, rings, rollers, &c., of imparting ready motion to canvas or blinds used against walls.

With glass protectors the importance of portability has been less thought about, because its necessity is less obvious. They do not exclude the light, and light is the best antidote to weakness. But in these days, when the economy of force is better understood, and it has been discovered that no force is expended in vain in the economy of the universe, it is, to say the least of it, a reckless waste of power to erect a permanent glass screen to effect a purpose which would be equally well or better accomplished by a temporary shelter.

Hitherto, one of the chief difficulties in the way of using temporary glass screens has been our manner of building and glazing glass houses. Glass, as we all know, till recently has been brittle in quality and expensive in price. We have thus become almost afraid to touch it. When employing it, our object has been to get it out of hand and beyond risk of breakage as soon as possible, and to leave it alone as long as we could. Hence our monstrously cumbersome and solid modes of building, and our permanent, immovable methods of glazing. They were born of the dearth, inferiority, and high price of glass, but the time is at hand when horticulturists will use house glass with as much ease and as little risk or fear of breakage as they now use garden pots. The abolition, by Mr. Beard, of sticky modes of glazing, has been one great step in this direction. The doing away with all glazing whatever, as Mr. Rendle has done in his portable tile and glass protectors for the growth of fruits, flowers, or vegetables, is another. These new modes of using glass in the formation of houses, screens, or ground or wall protectors, mark a new era in its portability. By the adoption of Beard's patent wrought-iron bars, and his felt buffers for the glass, the house or screen of to-day, may be converted into a box of glass, a bundle of iron, and a roll of felt to-morrow. Rendle's Protectors, again, are simple, and instantaneously resolved into heaps of bricks, and boxes of glass.

In Beard's wall-tree screens each rafter is complete in itself, and like every other rafter of the series. An iron wall-plate is laid along the ground or raised on brick walls, or piers, or wooden posts, at the option of the user. On this plate, raised lugs are cast, in pairs, at intervals of 20 in., and pierced with holes, and into each of these spaces between the lugs, the lower end of the rafter is placed, and an iron pin is passed through the pierced lug and bottom of the rafter. Along the top of the wall, just under the coping, an iron bar is carried along, being held in position by a few staples driven into or bolts run through the wall. To this support the upper end of the rafter is hooked or tied on. Thus the top and bottom are immovably fixed in the right places. But something more is needful to keep the bars in position and brace them into greater stiffness. It will be observed from fig. 1, which shows the screen at work on the wall, that the upper portion of the bar is bent. This form acts like a bracing tie on the rafter, and gives it additional strength. It is likewise of great service in throwing out the bar from the top portion of the wall, and enabling it to be brought down at a nearly uniform distance from it. This arrangement of surface is likewise the best possible for counteracting the energy of radiation by compensation from surrounding bodies. About half-way between these bands and the base of the bar, other holes are pierced; through these convenient lengths of iron rod are run, and are rendered continuous and without break, for any distance, by the use of coupling screws that bind the handy lengths together. Upon this bar, small pipes, whose length is exactly the width between the rafters, are placed; and these, as the screws are tightened, abut against the rafters on each side, and keep the whole quite firm. Then follows a buffer of prepared felt on the top of the iron rafter; next, a sheet of 26-oz. glass, then a second buffer of felt, and finally, the covering bar,

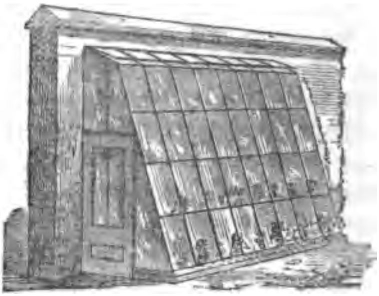


FIG. 1.

with a fixing nut,—and the screen is finished. The ends are made to fit anywhere, so that the screen may be shortened and lengthened at pleasure. In fact, it can be adapted to any position, and erected or taken down almost as soon as this description of its construction and dissolution can be read.

Fig. 1 shows the glass screen secured to the wall by a hook or staple, and keyed to the cast-iron base. The base, that is, the wall or ground plate, may be fastened to a plank, or to plugs driven into the ground at intervals, or to brick pinning; in either case a proper level must be retained. Fig. 2 shows the screen converted into an upright span vinery, or orchard house, by placing two lengths of it back to back, and fastening them together. Fig. 3 shows the same screen converted into a valuable span, or lean-to, by reversing the bars; the short end being turned towards the base, and keyed with a pin.

The thorough portability of Beard's screens may be said to be the parent of their convertibility; they are readily moved, and as readily converted to other uses after being transposed. About the middle or end of May, for instance, they might disappear from the face of our walls, since the fruit and trees will then grow, and finish both crop and wood, as well or better without them. Here there is, say, a hundred feet run of glass relieved from active service. What shall we do with it? It may simply be reserved for future use, for it can be snugly and safely stored in the smallest space, and kept again till the following February or March. And this has mostly been the manner of treating wood or glass screens that have possessed a sort of portability in the form of sashes; and for such screens, possibly, the storing-away method was as good as any, for they were pre-eminently perishable. But these iron-bar screens are not only portable, but indestructible. Who can wear out or rust out glass? and iron coated with magnetic paint will last for many long lives. Time will, indeed, rot felt, but enough for a screen can be had ready for use for a few shillings. With such screens in our hands, it would be a sheer waste of power, or a glaring improvidence of useful resources, not to use them constantly. There is not a garden of any pretensions in the country where 100 yards of such glass screens could not find constant and profitable employment throughout the year. The moment they could be released from the walls, they could be placed over vines, either on walls, on espaliers, or on the

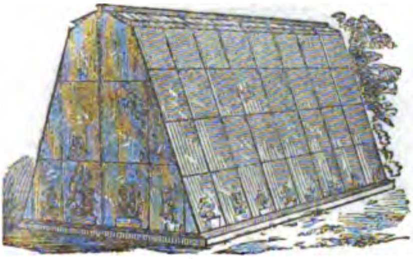


FIG. 2.

ground, or to cover spaces devoted to vines, tied up like raspberry canes on the French method. Or the two fronts of the screen might be converted into a narrow, upright, span-roofed house, admirably adapted for a late vinery, as in fig. 2. The screens might readily be placed over pits, or frames, or over spaces in the open ground, provided with bottom heat by means of dung, for the growth of melons, cucumbers, tomatos, capsicums, &c.; or any of these could be well grown in such screens against an empty wall, as in fig. 1, or in the narrow house formed with the two screens, as in fig. 2. Then, again, what capital protection they would afford for second crops of strawberries, from forced plants in the open ground, for late cauliflower, winter salading, winter or very early spring radishes, carrots, &c., and for the safe storage of Walcheren broccoli for winter use! The narrow house (fig. 2) would form an admirable structure for the growth of late or summer-flowering plants for the conservatory, such as Thunbergias, Salvias, Pelargoniums, Fuchsias, &c. Flooded with light from top to bottom, and close to the glass on each side, such plants would be all bloom. Or for a real plant-house, such as fig. 3, it is only needful to invert the bars, and the bent portion would become a side-light, and the other ends could be fixed together with a central plug of wood or iron, and rendered waterproof by a simple coping. The screens could thus be converted into one of the best possible plant-houses for the growth of such semi-stove plants as Euphorbias, Begonias, Poinsettias, Gesneras, and many of the hardier stove ferns for room, conservatory, or stove decoration in winter. Thus the usual strain upon the glass houses during summer would be relaxed, and room be made for an artistic arrangement of specimen plants and climbers, which would bring up the beauty of the glass show-houses to a nearer approximation with the high summer beauty to be seen outside.

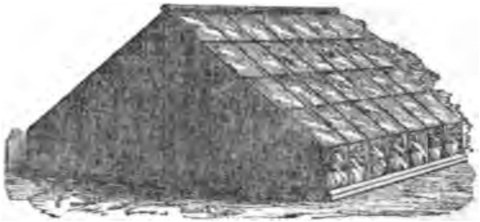


FIG. 3.

These screens, when not in use as mere protectors, might, by such conversion, be made to serve any purpose of permanent unheated houses. Good in themselves, portable beyond all precedent, and as readily convertible as they are easily portable, strong, elegant, and cheap, I prophesy for them a distinguished future, in which they will largely help to clothe our walls and load our tables with plenty, and fill our glass and dwelling houses with the highest forms of beauty.

Hardwicke, Bury St. Edmund's. D. T. FISH, F.R.H.S.

NEW FOLIAGE BEDDING PLANTS.

ACCORDING to my estimate of their merits, the following are the five best of the new foliage plants, adapted for bedding purposes, which have recently come into the hands of cultivators. As I have paid some attention to them in their various stages of growth, and have thus gained some experience of their habits and characters, I propose to add a few observations upon each. I consider Iresine Lindeni to be unquestionably the bedding acquisition of the season :—

Iresine Lindeni.—This is perfectly distinct from I. Herbstii, although of a similar habit and character. It differs in this way : I. Lindeni has little or no variegation in its colour, but is of a beautiful glossy, dark blood-red, both in the stems and leaves. The latter are peculiarly neat and pleasing, being lanceolate in outline, and quite flat. The plant is a quick, branching, robust grower, and may be cut or pegged down to any required height. It is exceedingly easy to multiply, grows on through all kinds of ordinary summer and autumn weather, and stands without injury until it becomes subjected to several degrees of frost.

Cineraria acanthifolia.—This, like the above, is grown for its ornamental leafage, and somewhat resembles C. maritima, but has the foliage more thistle-like in form. It is far more attractive than the Centaurea, and possesses more of silvery or frosty whiteness than any plant that I am acquainted with. It is of vigorous, upright growth, but can be kept pinched down to any required height. For growing as a single pot specimen for the decoration of the conservatory, the hall, or the balcony, this is a really valuable plant.

Achyrocline Sandersoni.—This is also remarkable as a white-leaved plant. For contrast with Alternanthera, Lobelia, Golden Feather, or any similarly dwarf-growing plant, where scroll or pannel bedding is carried out, this is exceedingly useful, as it rarely exceeds 6 in. or 8 in. in height, and grows as much through during the season. Its growth is very thick, forming quite a miniature bush. It can be pinched or clipped into any required shape.

Gnaphalium tomentosum.—This is very similar in appearance to the common lavender, but has a more slender branching habit of growth. It is much whiter than the common G. lanatum, and is almost equally easy to increase. This plant will grow from a foot to eighteen inches high, but can be clipped to any height or form. I think, judging from its quick growth and convenient habit, that this will be extensively used for bedding purposes.

Abutilon Thompsoni.—This most singular plant, which has beautifully blotched leaves, was thought to require a stove temperature when first introduced, but during both the last and the present season it has formed a grand object in the flower garden. The leafage and growth are very similar to those of A. striatum, with the exception that it is dwarfer and more dense, with foliage of a beautiful light glossy green, every leaf being beautifully spotted and blotched with yellow, which gradually turns with age to a glossy silvery hue. So uniquely is the leaf spangled with these attractive colours, that, without the plant is minutely examined, one can scarcely be brought to believe that its peculiar blotching can be natural.

There can be no doubt but that the above-named plants will play a most conspicuous part in our future bedding arrangements.

Woolwich. H. Cannell, F.R.H.S.

MONTHLY CHRONICLE.

DAHLIA imperialis has been flowered this season in great beauty in the garden of the Royal Horticultural Society at Chiswick, and in other establishments. The plant is naturally of a very tall-growing habit, and at Chiswick, but for an accident, would have been at least 20 ft. high. Though broken off at top, it was still 12 ft. high, each of the numerous branches terminated by a grand paniculate inflorescence of beautiful lily-like white flowers, of which we hope shortly to give an illustration. As a late-flowering conservatory plant, this Dahlia is a noble acquisition. Its principal drawback is its great height, but this objection Mr. Alfred Salter, of the Versailles Nursery, Hammersmith, has obviated, by grafting a young shoot of Dahlia imperialis on a tuber of one of the liliputian kinds. The scion at once branches out into a pyramidal head, the upper branches of which are clothed with flower-buds. The grafted plant, in fact, looks as though the top of one of these tall Dahlias had been removed and struck as a cutting. Comparatively few persons can give this noble plant sufficient head-room under ordinary circumstances; but this successful experiment of Mr. Salter's will bring it within the reach of all who have a moderate-sized greenhouse or conservatory. The plant requires a little extra heat just to bring out the flowers.

—— The leaf of the Victoria regia is enabled to sustain a great weight, owing to the deep cell-like compartments formed by the prominent reticulated ribs of the under-surface. In some experiments recently made by Mr. W. Sowerby, in the Regent's Park Botanic Garden, a not very perfect leaf was found capable of bearing up a load of 436 lb.

—— Some of Mr. Banks' new Fuchsias, sent us by Mr. H. Cannell, are remarkable for their size and beauty. One is quite a monster, the corolla being fully 3 in. in expansion, the individual petals 1½ in. long, and 1⅜ in. broad. Another refined expanded flower measures fully 2½ in. across the corolla, both these being of a reddish violet; while a third, nearly equal in size, has a rosy lilac corolla.

—— During the past autumn, fruits of the Mango have been offered for sale in Covent Garden Market, thereby realizing a prediction made many years ago by the late Sir Joseph Banks. These fruits had been obtained from Madeira. The Mango had already fruited at Chatsworth, in the gardens of Lord Powis, and elsewhere, but this is supposed to be the first time it has been offered for sale in this country.

—— The correct name of the plant known in gardens as Acalypha tricolor, a name given to it by Dr. Seemann, has now been ascertained to be *Acalypha Wilkesiana.* It is one of the most striking of foliage plants, and is not only beautiful in itself, but affords variety. Dr. Seemann in his *Flora Vitiensis* thus remarks on it:—"This shrub attains about 10 ft. in height, and its foliage has generally the colour of our Copper Beeches; but very often the leaves assume a great variety of tints—pink, yellow, and brown, and then the plant is highly ornamental. It is often cultivated by the natives."

—— The following Presentations have recently been made:—To Mr. James Barnes, on the occasion of his leaving Bicton. This testimonial consisted of a silver tea service, on which was the following inscription: "Presented to Mr. James Barnes, for 30 years director and manager of the Bicton Gardens, &c., by attached friends, in recognition of his manly sincerity, integrity of character, and benevolence and geniality of disposition; and in appreciation of the valuable services he has rendered, through a long and useful life, to horticultural science, practical gardening, and agriculture."——To Mr. Thomas Baines, on the occasion of his removing from Bowdon to the vicinity of London, with his esteemed employer, Horatio Micholls, Esq. This presentation consisted of a gold watch and an address. The latter, illuminated on vellum, and mounted in a handsome gilt frame, was as follows: "Presented, with a gold watch, to Mr. Thomas Baines, by the gardeners and friends of Altrincham, Bowdon, &c., on his leaving the neighbourhood, as a mark of their esteem and regard, October 27, 1869." The watch bore a similar inscription.

Obituary.

—— Dr. Maclean died in the early part of October last at Colchester, where he had resided for the last fifty years. Horticulture loses in him one of that small band of practical experimentalists whose labours are so valuable. Though in practice as a physician, his leisure hours were devoted to horticulture and floriculture, and his name will be especially remembered in connection with new Pinks and new Peas.

—— Mr. Henry Tait, of the Sydenham Nursery, Kelso, died on November 11th. He had been for thirty-six years a nurseryman of that town.

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